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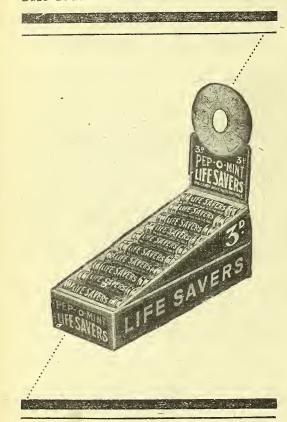
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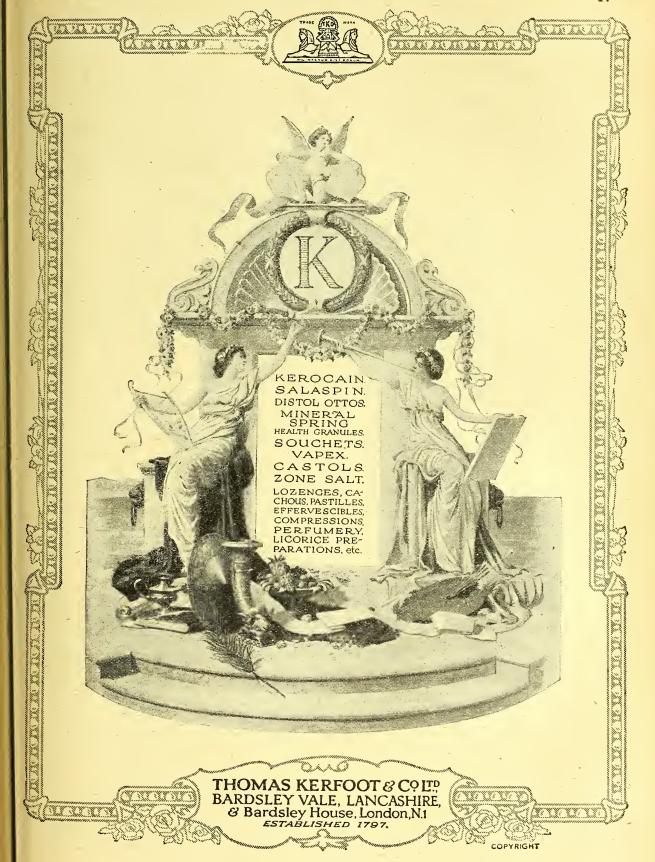
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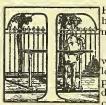
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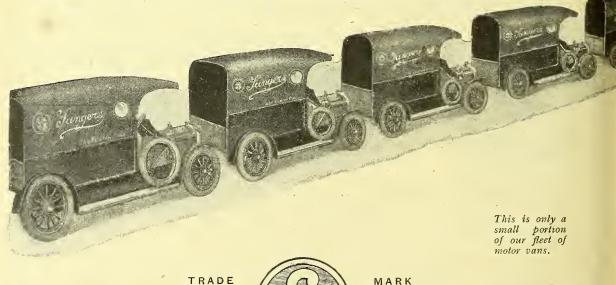
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There is quite an interesting relic of those days still to be seen in Piccadilly on the curbstone outside Green Park, opposite the Cavalry Club. It is in the form of a stand which was specially erected by the Vestry of St. George's, Hanover Square, in 1861 (at the suggestion of R. A. Slaney, Esq., M.P. for Bloomsbury for 26 years), for the convenience of porters, upon which their heavy loads could be rested and easily shouldered again.

That method of delivery departed long ago, and this year has seen the closing of another

chapter in the history of Sangers. We have now entirely dispensed with horse transport and rely only on the speedier motor traction. The various rounds have been worked out to such an exact state that one of our customers remarked the other day that "If your van does not pull up outside my shop by ten minutes to the hour I know that something has gone wrong—a puncture or some such unavoidable occurrence." Only by accurately scheduled departures and arrivals could we hope to keep our reputation for speed and promptitude, and these schedules are revised every time a new customer opens an account with us.

Not only do we excel in road transport; our internal arrangements for the dispatch of goods by rail are so adjusted that every possible advantage is taken of the collection facilities of the various rail and carrier companies. Where it is possible to complete orders on the day of receipt, such orders are sent off that day, and many are the compliments we receive upon our speedy delivery of the goods.



# and appreciation

"Astounded with your prompt delivery, which will be the means of my sending you a large amount of custom."

"Thanks for smart dispatch of last goods. Herewith another for similar treatment. I think you are snatching all my orders lately, the fact is the goods get here in a canter every time."

"Goods to hand. Thanks for prompt attention to all my orders."

"I posted an order to you overnight, when I arrive at my shop next morning your messenger is waiting on the doorstep with the goods. Too bad, really!"

"I must congratulate you for your excellent method of delivery."

"I take this opportunity of thanking you for the neat, ingenious and serviceable calendar you sent me, which I much appreciate; also to say that for some time past I have felt very decidedly impressed with your services in general, embodied in the prompt and reliable delivery of goods, your active attention to specials, the smart rendering of accounts, your fairness and accuracy in figures, and last but not least, your inclusive and up-to-date catalogue.

"That yours is a firm with good business methods goes without saying, but having been on your books for a number of years, I claim the ability to form an opinion and also the privilege of offering it in a hearty and sincere spirit, spontaneously prompted by true appreciation, coupling it with my congratulations to Directors and Staff for the great degree of efficiency attained and maintained—a source of confidence and trust to all depending on you."



258 EUSTON ROAD, LONDON, N.W.1 OLD INFIRMARY BUILDINGS, NEWCASTLE-ON-TYNE

# HAY'S ESSENCES



FOR -

#### AERATED WATERS

MESSINA LEMON
LIME JUICE & SODA
PALE DRY GINGER ALE
STONE GINGER BEER
SWEET ORANGE
JAMAICA GINGER

SAMPLES AND QUOTATIONS ON APPLICATION

HEAD OFFICE &
LABORATORIES

WM. HAY, LTD.

Essence Distillers,

HILL & LONDON

LONDON DEPOT, 3 BROWNING ST., WALWORTH RD., S.E. 17.

Telegrams "Ginger Hull"; "Bushworth London."

Codes: ABC, 5th Edition; Bentley's.



TRADE MARKS.

Award London 1881, "For Excellence of Quality"

MEDALS and AWARDS:
LONDON, 1881 CALCUTTA, 1884
VIENNA, 1883 CHICAGO, 1893

Telephone-HOP 1831

Codes used—
"A.B C" 5th Edition
Lieber's
Bentley's

Cables—
"EKLIPS, LONDON"

#### SYNTHETIC

#### OTTO of ROSE

"ZINYL" BRAND (Regd.)

THIS is an actual synthetic product, not a mere mixture of essential oils, replacing Bulgarian and French rose products, since it has the characteristics of both.

The "ZINYL" Brand passes the most discriminating tests, even the test of taste. It has the sweet honey-like taste and odour of genuine otto, and is much stronger, yet costs but a fraction of the price.

For all branches of Perfumery, it is absolutely indispensable.

A single trial will prove convincing, and comparison is invited with other leading Synthetic Ottos.

Present Price - - 15/- per ounce.

SPECIAL FOR QUANTITY.

"The Synthetic Otto of Rose is especially good, and has given the greatest satisfaction to even the most exacting critics."

Perfumery and Essential Oil Record, May 1918.

#### H. E. STEVENSON & CO.

Wholesale Druggists and Manufacturing Chemists,

122 GREAT SUFFOLK ST., LONDON, S.E.1

For full list of our Synthetic Ottos refer to the "Chemist & Druggist" Diary.

#### PURE ENGLISH OF PEPPERMINT

Grown on my own farms.

£1000 to Charity I will give £1000 to any Charity named by any person who can prove my Peppermint Oil to contain any adulterant or foreign Oil.

Inspection of Farms and Distilleries cordially invited.

Seymour's Distillery & Herb Farm, HOLBEACH. LINCS.

Roermond

Aromatic Chemicals Flower Oils Synthetic Perfumes Essential Oils

CHEMICAL WORKS, ROERMOND

H. RAAB & CO., ROERMOND, HOLLAND.

Agent for the UK .:

MR. ALFRED PAUL WHITE, 5 Water Lane, Gt. Tower St., London, E.C. 3

HIGHEST QUALITY.

UNIFORM DELIVERIES.

CHLOROPHYLL C. CHLOROPHYLL CC. CHLOROPHYLL S. CHLOROPHYLL P.

Oil soluble. Blue Shade. Oil soluble. Yellow Shade. Water and spirit soluble. Soluble in 70% to 100% alcohol.

THE SANDOZ CHEMICAL CO. LTD., BRADFORD.

Whaitep, Bilgate, London.

The

is the Standard of Quality

#### GENUINE AMERICAN PEPPERMINT

we offer the three following grades

NATURAL finest single distilled

#### PRISMENTHA redistilled B.P.

#### SUPERMENTHA multiple rectified

Apply for Samples & Quotations

#### DODGE & OLCOTT CO.

Head Office: Factory: 87, Fulton St., New York. Bayonne, New Jersey.

Condon Coffice: 20, Mark Lane, E.C.3.

TELEPHONE: CITY 2468

TEL. ADD "EGDARF, FEN, LONDON"

EUROPEAN AGENTS:

Paris. Ed Levy 13 bis, Rue des Mathurins.

Grasse: Ant. Laugier 8 Boulevard Victor Hugo

#### PARFUMS D'ORSAY

#### **PERFUMES**

ROSE, CHYPRE, CHEVALIER, FLEUR DE FRANCE, LES FLEURS, ETC.

COMPLEXION POWDERS

LOTIONS

SHAMPOO POWDERS

BRILLIANTINES

FACE CREAM

TOILET SOAPS

LIP SALVES

SILK SACHETS

EAUX DE COLOGNE

ETC. ETC.

SHAVING SOAP

Sole Agents for Great Britain;

#### NAMIAS' SONS

54 GEORGE STREET, BAKER STREET, LONDON,

Telephone: Mayfair 3925.

Ireland: W. J. Rankin & Son, 11 Waring St., Belfast.

HIGHEST CONCENTRATION.

Sole Agents for Gt. Britain and Colonies

FRIES & BRO.

The World - Renowned Makers of

FIRST **OUALITY ESSENCES.** 

PEACH

Stocks

London.

APRICOT HONEY

Ask for

MAPLE

Quotations & Samples.

&c.

A. CONNELL & CO.,

20 BEVIS MARKS, LONDON, E.C. 3.

Phone: AVENUE 1945. Telegrams: "NITROZONE, LONDON." 

**JAKSON'S** PEPPERMINT, LAVENDER & CAMOMILE OILS

are the BEST.

Produced and Prepared by

THE LARGEST GROWERS & DISTILLERS IN ENGLAND.

Distillery:

J. JAKSON & CO. (Mitcham Rd., 1921), LTD. Mitcham Road, WEST CROYDON.

AGENTS for the U.K. :

F. NEWBERY & SONS, LTD.

27 & 28 Charterhouse Square, London, E.C.1

ESTABLISHED 1768.

#### ANTOINE CHIRIS GRASSE

#### NATURAL ESSENTIAL OILS

From GRASSE WORKS and BOUFARIK (Algeria).

#### EDIBLE OLIVE OILS GUARANTEED PURE. GUARANTEED PURE. ALMONDS OILS From GRASSE.

#### TERPENLESS OILS of High Grade.

From GRASSE WORKS.

#### SICILIAN OILS

DIRECT IMPORT

From REGGIO.

#### BOURBON and TAHITI BEANS

From their own Plantations.

#### ORIGINAL MUSK TONKIN

From CHUNGKING BRANCH

#### FLORAL WATERS

From GRASSE WORKS.

#### BULGARIAN OTTO of ROSES

From BONTCHEFF & KIDOFF KAZANLIK (Bulgaria).

#### TECHNICAL AND PHARMACEUTICAL OILS

From ANTOINE CHIRIS MARSEILLE.

#### SYNTHETIC FLORAL OILS

From GRASSE WORKS.

#### FRUITS FLAVOURING **EXTRACTS** GUARANTEED.

From DELAWANNA WORKS (U.S.A.)

#### FINE ORGANICAL CHEMICALS

From GRASSE AND DELAWANNA

#### BENZOIN SIAM GUMS

From HAIPHONG AND CHAPA-LAO-KAY.

#### GERANIUM BOURBON AND **ALGERIAN**

From own Plantations.

#### LAVENDER OILS

#### ANTOINE CHIRIS, LTD.

3 Drapers Gardens, LONDON, E.C.2





"4711" gives satisfaction and brings repeats.

"4711" takes very little time to sell.

"4711" gives you adequate profit.

Write for particulars of our special

#### WINDOW DISPLAY TERMS

"4711" is largely advertised.

"4711" is artistically advertised

#### IT SELLS AT SIGHT.



#### P.A.T.A. PRICES.

	ev rov .	4 4.	AALIC	220.	
Quarts	-	_	~	56/~	each
Pints	~	es#	~	30/-	
Half-pin		æ	aas	15/~	,,
6-oz. Sq		~	~	14/~	,,
4-oz. Or	riginal	=	~	8/9	,,
2-oz.	,,	-	~	4/9	,,
1-07 W	atch Sl	nane	-	2/6	



Sole Importer :-

R. J. REUTER, 69 Carter Lane, LONDON, E.C.4



#### PROFIT ON INVESTMENT

313/4%

Wholesale Prices: 1/3 size 12/- per dozen

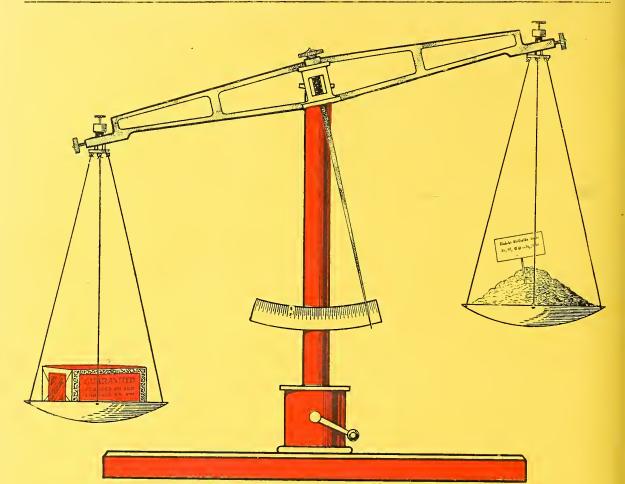
3/- ,, 28/6 ,,

Less 5% on Window Show Parcel of £3 Assorted Between All Lines.

BILE BEANS & KER-NAK ARE NOW THE SAME RETAIL & WHOLESALE PRICES AS ZAM-BUK

EXCELLENT ADVERTISING

C. E. FULFORD, LTD., LEEDS.



The Balance of Trade is heavily in favour of well-packed and labelled goods

For all labels, cartons, wrappers and showcard printing, go to the Specialists.

#### FORD, SHAPLAND & CO LIMITED

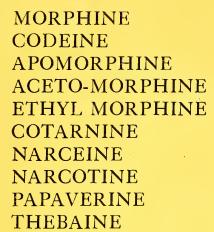
Letterpress, Lithographic and Fine Art Printing of every kind Great Turnstile, High Holborn, London, W.C.1

TELEPHONES: CITY 65: HOLBORN 5503
"FORSHAPCO, WESTCENT, LONDON"

#### Ancesthetics

CHLOROFORM AND ETHER

#### **Alkaloids**



ARECOLINE
ATROPINE
EMETINE
ESERINE
HOMATROPINE
HYDRASTINE
PILOCARPINE
SPARTEINE
STRYCHNINE
VERATRINE

#### Standardized Extracts

BELLADONNA CANNABIS CINCHONA ERGOT
IPECACUANHA
NUX VOMICA

**OPIUM** 

#### **Opium**

TURKISH-NATURAL OR IN POWDER

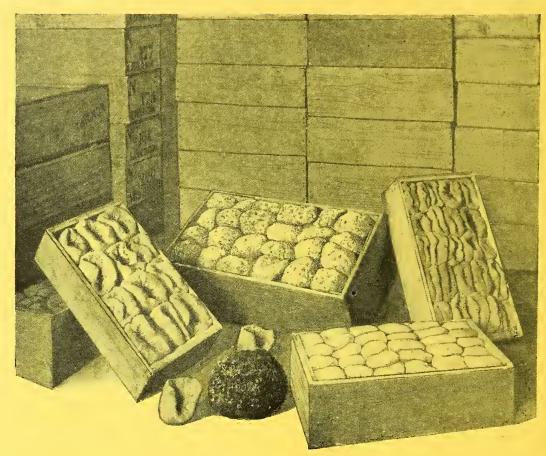
Morphine, Aceto-Morphine and Opium, being subject to the restrictions of the Dangerous Drugs Act, are offered by us in strict accordance with the regulations issued under that Act,

### J. F. MACFARLAN & CO.

9 and 11 MOOR LANE, LONDON, E.C.2

Works: Abbeyhill and Northfield, Edinburgh.

SPONGES SPONGES



**BUY DIRECT** 

# SPONGES

H. M. COHEN & CO.

Sponge Importers and Exporters

32 Minories, London, E.1

Telephone: Avenue 840.

Telegrams: "Pantalaria, Ald., London."

SPONGES ====

# ur Centenary!

of

#### PRACTICAL **EXPERIENCE**

linked with modern methods, up-todate machinery, skilled labour and effective control, yields

#### **EFFICIENCY**

This is what we offer to-day.

#### 1823—1923

One hundred years is a long time-time enough to make or mar a good reputation. For a whole century buyers of Medical and Surgical Plasters made at Leicester have been fully satisfied. To-day the name of "St. Dalmas" stands for excellence both of quality and of service.

It is on a portion of the premises occupied to-day that Plasters were first spread by machinery in this country. In the early days the business was known as "Moor's Original Medical Plaster Works," and one wonders how many Millions of Yards have—since 1823—been supplied to succeeding generations of Wholesale and Retail Druggists.

To have served the Trade for a century and to have served it successfully is something of which any firm may be justly proud.

To our customers one and all we tender sincere thanks for the many ways in which they have helped in the expansion of our business.

To pharmacists not already on our books we offer good value and efficient service.

A. de ST. DALMAS & Co., Ltd.

**LEICESTER** 



#### G.O. SPECIALITIES

G.O.

#### Lemonade

Bonus for Window Displays.

1 dozen 6½d. free with £3 parcel. 2½ dozen 6½d. ,, ,, £6 ,,

A suggested £3 parcel is as follows:

	"	n 7d. 3½d. 6½d. 1/~	,,	Lemonade	 	0 1 0	8 8 17 8	0 0 0	
•	"		ner	cent for CA		£3	1	0	

ı dozen 6 ½d. size free in payment for display. Sells for  $f_4$  18s, 6d. Your profit 40% on turnover.

Also 100 free samples with a £3 order. 200 ", ", " £6 ",

Packed in Smart Cellophane Envelopes with your Name and Address on back. Window Slips and Showcards supplied.

#### Seidlitz Powders

EXTRA STRONG LEMON FLAVOURED (Sweetened)

NEW BONUS WINDOW SHOW TERMS

Special Carriage Paid Parcels.

1	1½ Cross and bonus of 20 packets free.	1 11 6	2 19 0
2	3 Gross and bonus of 60 packets free.	3 3 0	6 3 0
3	5 Gross and bonus of 100 packets free.	5 5 0 less 5%	10 5 0

I,css 21% for C.W.O. Retail 3d. P.A.T.A. PACKED IN HALF-GROSS SHOW OUTERS.

#### G.O. Ginger Beer Powders

(EFFERVESCENT)

Retail 2d. Cost 15/- gross. 6 doz. Tin Boxes.

#### GREENWICH LEMONADE COMPANY

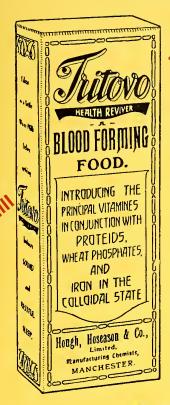
(J. MILNER, M.P.S., Proprietor.)

> Telephone: Greenwich 947



11 JOHN PENN ST. LONDON, S.E.13

Telegraphic Ad.: "Cortlimon Green, London."



K Tritovo.

H.H.&Co.

### TRITOVO

A blood-forming, health-giving TONIC FOOD. Its continued use is associated with a feeling of mental and physical fitness derived only from a system whose chief organs are working in perfect harmony.

The enthusiasm with which this preparation has been taken up by the Medical Profession ensures its success as a selling line of Real Merit.

Packed in 2 Sizes, 1/9 and 3/-, showing a good margin of Profit.

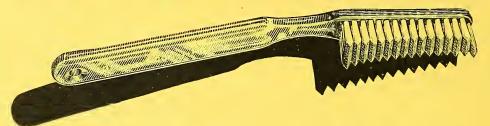
HOUGH, HOSEASON & CO., Ltd.

Manufacturing Chemists,

Sun Buildings

MANCHESTER.

## KOH-I-NOOR



### The Ideal Tooth Brush

3/- LINE **23/6** DOZ.

2/6 LINE **20**/- DOZ.

1/6 LINE **12**/- DOZ.

In various coloured transparent celluloid handles. Bristles absolutely fast. We will exchange any brush not giving satisfaction. 50°/.
PROFIT

ATTRACTIVE SHOW CASE FREE WITH 3 DOZ.

Well advertised to the public and in increasing demand.



#### The Ideal Nail Brush

MADE WITH PURE BRISTLE

Covered by same guarantee as Tooth Brush. Retail 2/-. Wholesale 16 - doz.

66666666666666666

9999999

#### David Copperfield entertains the Micawbers!

"Having provided a bottle of LAVENDER WATER, two wax candles, a paper of mixed pins and a pincushion to assist Mrs. Micawber in her toilette . . . I awaited the result with composure. . . . '

"As to Mrs. Micawber, whether it was the effect . . . of the LAVENDER WATER, or the pins, or the wax candles . . . she came out of my room, comparatively speaking, LOVELY."

We have every reason to believe that this rejuvenation of Mrs. Micawber was due to POTTER & MOORE'S famous MITCHAM LAVENDER WATER, for this product first appeared in 1749.

## POTTER & MOORE'S 1749 MITCHAM LAVENDER WATER

A Perfume of distinction which has stood the test of time!

Contained in bottles of the following description:

CONCAVE (as illustration)

CONVEX

WICKERED GLOBE

WATCH SHAPED (FLASKS)

GLOBE STOPPERED



BATH SALTS

SMELLING SALTS

SACHETS

SOLID FORM (Frozen Lavender Water)

TOILET SOAP

Prices on application

POTTER & MOORE,

The LAVENDER DISTILLERY, MITCHAM, SURREY.

(Established 1749.)

Sole Proprietors:

W. J. BUSH & Co., Ltd., Ash Grove, Hackney, E.8

## PAPIER POUDRÉ

TRADE



British Made Goods.

Note our Trade Marks.

"LEHCARESOR."



Beware of

Spurious Imitations.

REGISTERED

PAPIER POUDRS

PARADE MARL

PAPIER POUDRE, LTD., 46 Baker St., Portman Sq., London, W. 1. and at Paris.

WHITE, ROSE or RACHEL Tints, 4d., 6d., 8d., and 1/4 size Booklets, 2/8, 3/9, 5/- and 10/- per doz. net, respectively.

SUNBURN TINT, 8d. and 1/4 sizes only, 5/- and 10/- per doz. net.

NOTICE TO THE TRADE.—We are now making a 3d. book
in WHITE, ROSE, and RACHEL Tints at 2/- per doz. net.

#### NEW LINES IN PAPIER POUDRÉ.

BOOKS IN WHITE ROSE and RACHEL TINTS, containing neat Mirror, 6d. size 3/9 per dozen net.

1/- size 7/6 per dozen net.

NEAT MIRROR CASES, 1/6 ... ... ... ... ... ... ... ... 13/9 per doz. net. REFILLS to Mirror Cases in White, Rose or Rachel, 4d. ... ... 2/8 per doz. net. 8d. SHAVING PADS, for Use after Shaving (unscented), white only ... 5/- per doz. net.

### POPPŒA ROUGE

A most popular line.

(Regd.)

Made in booklet form. One size only, viz. 1/-, at 8/- per doz. net. Mirror Cases 1/6, at 13/9 per doz. Refills for same 6d., at 3/9 per doz. net.

PAPIER POUDRÉ, Ltd., 46 BAKER STREET, LONDON, W.1

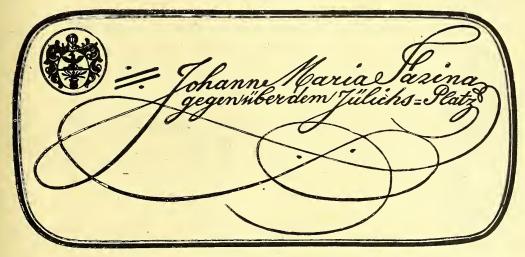
## "THE GENUINE" EAU DE COLOGNE

OF

JOHANN MARIA FARINA, GEGENÜBER DEM JULICHS-PLATZ COLOGNE

HAS had a world-wide reputation for over 200 years, and has obtained the highest awards at all International Exhibitions—London, 1851 and 1862; Paris, 1855 & 1867; Grand Prize, Paris, 1900.

THE LABEL.



is probably the most widely imitated Trade Mark in the world—but note the inverted "r" (almost like a "z") in the name Farina—no less than thirteen actions have been successfully brought in the High Court of Chancery to protect it.

IT SELLS at sight because it is known to be the genuine and original Eau de Cologne.

#### Protected - P.A.T.A. - Prices.

100		Each		Each
	00-Watch Flask		No. 3—Double White Bott	es (8 oz.) 16/6
No.	01—Short White Bottle	(1 oz.) 2/6	No. 4—Small Wicker Bott	le (6 oz.)12/6
No.	0-Watch Flasks 1-Short White Bottles	(2 oz.) 4/6	No. 5—Medium ", ",	(12 oz.) <b>25/-</b>
	2- ,, ,, ,,		No. 6—Large ,, ,,	(24 oz.)50/-

Every Chemist should send an Order, we pay Carriage.

For Prices and Highly Advantageous Terms apply:

### BLACKALLER & PLEASANCE

8 LAURENCE POUNTNEY HILL: LONDON, E.C.4.





## BATH CRYSTALS

PROTECTED RETAIL PRICES

Showing from  $33\frac{1}{3}\%$  to 50% Profit.



IT IS TO YOUR ADVANTAGE TO SUPPLY THE BEST, AND ENSURE YOURSELF A GOOD PROFIT.

These Goods provide a most Attractive Display and command a Ready Sale.



Write for Catalogue and Special Terms.

SEND US YOUR ENQUIRIES AND ASK TO SEE SAMPLE RANGE.

PARFUMERIE BARRANGER,

34 BUCKINGHAM PALACE ROAD,

LONDON, S.W.1.

'Phone: Victoria 2648.

## DEARBORN

(1923)

LIMITED

### 37 Gray's Inn Rd., LONDON, W.C.1

Toilet Specialties.	Prices per doz.	Selling Price									
PILENTA SOAP. A complexion soap	to Retailer.	P.A.T.A.									
PROLACTUM. For the lips	10/-	1/-									
PARSIDIUM JELLY. For wrinkles	1	1/-									
ALLACITE OF ORANGE BLOSSOM	0010	2/6									
A dressing cream.											
BORANIUM. A hair toutic	22/6	2/6									
CLEMINITE. For a face lotion	00/0	2/6									
COLLIANDUM. For a face tint	00/0	2/6									
PERGOL. A deodorant	00/0	2/6									
TEKKO PASTE. Camphor cream	00/0	2/6									
STALLAX. For a shampoo	00/0	2/6									
JETTALINE. For clearing the skin	24/6	3/6									
PHEMINOL. A depilatory	201	4/-									
MENNALINE. For the eyelashes	001	4/-									
MERCOLIZED WAX. A face cream		3/6									
STYMOL. For oily complexions and blackheads		4/-									
SILMERINE. Hair-curling fluid		2/6									
BARSYDE. Dandruff eradicator	0010	2/6									
TAMMALITE. For grey and faded hair	00/0	2/6									
LIQUID PERGOL	24/6	3/6									
To check excessive perspiration locally.		-,-									
BICROLIUM. For whitening the hands	22/6	2/6									
HARAPOSA. Nut oil shampoo		2/6									
COCONOIDS. For figure development	04/0	3/6									
AMBEDIA. Backpuff each		15/-									
AMBEDIA. Backpair Cach	11/3	10/-									
The Products of Messrs. PARKER, BELMO	ONT & C	CO.									
CLYNOL BERRIES. For obesity	(36/-	4/-									
	58/6	6/6									
SOFT PALERIUM. For wrinkles	45/-	5/-									
LIQUID NAIL POLISH. Brilliant and lasting	10/-	1/-									
STOCKED BY ALL WHOLESALE HOUSES.											

#### COLONIAL DEPOTS AND AGENCIES.

AUSTRALIA:

ALL WHOLESALERS, & DEARBORN (Australia), Ltd., Grace House, Clarence St., SYDNEY.

SOUTH AFRICA:

LENNON Ltd., Cape Town, etc.

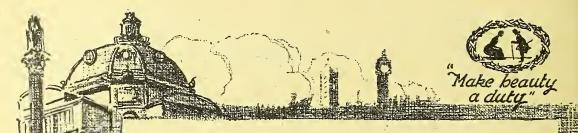
SIVE BROS. & KARNOVSKY, Johannesburg.

FRAMJEE & SON, Bombay.

SMITH, STANISTREET & CO., Calcutta.

NEW ZEALAND SHARLAND & CO., Auckland and Wellington.

SOUTH AMERICA:
DEARBORN (South America), Ltd., Calla Salta 264, BUENOS AIRES.



E take this opportunity of thanking the many friends who visited our stands at the recent Chemists' Exhibition and of expressing the hope that the exhibit proved of interest.

OUR representatives have now resumed travelling and we shall look forward with confidence to receiving a big influx of orders for the many lines exhibited.

## BRISTOW'S TOILET

#### **PREPARATIONS**

are universally recognised as the acme of purity and refinement. They are backed by 150 years' progressive achievement and the demand for our many lines was never greater than it is to-day.

## BRISTOW'S GEORGIAN SOAP

#### BEAUTY POWDER & OTHER TOILET REQUISITES

though comparatively new lines have quickly achieved popularity. They are being well advertised and are worthy of the highest traditions of the firm which makes them.

T. F. BRISTOW & CO., Ltd. (Established 1777) ST. JAMES' WALK, CLERKENWELL, LONDON, E.C.



HE remarkable increase in the sales of the Elfrida Series has been an outstanding feature of the last few months' trade. We have emphasised this many times and we cannot do so too often, for these extraordinary sales point a moral.

E E E

Why is the Elfrida Series selling so well? Moderate prices for one thing; quality comparable with that of many higher priced lines for another. Then there are the attractive packs. They look just as good as they are, which is saying quite a lot and means a lot, particularly to a woman.

8 8 8

THE Elfrida Series secures your co-operation by its generous profits and excellent show and display matter. You haven't much to do when there is an Elfrida Display in your window,

just take the money—that's all—but there's plenty of that.

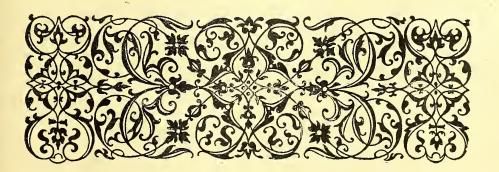
8 8 8

THE new Elfrida lines are worthy followers of the previous products. Profit, packs and show matter are all just as satisfactory, and each of the lines is one which is of definite value and use to your customers.

8 8 8

HERE they are: — Elfrid a Parfum (two sizes and trial size), Bath Salts, Tooth Paste, Compact Face Powder (two sizes) and Cold Cream (with trial size).

## W. B. CARTWRIGHT, LTD. RAWDON, NEAR LEEDS ::



## SOLPORTS

ARE THE SPECIALISTS IN THE MANUFACTURE OF

## POWDER PUFFS

:: Our Newest Series includes a :: CHARMING VARIETY of Dainty Styles combining Utility with Artistic Beauty.

#### "TO SHOW THEM IS TO SELL THEM"

Prices and Particulars on request.

OBTAINABLE FROM ALL LEADING WHOLESALERS

MADE IN LONDON, ENGLAND

### SOLPORT BROS., LTD.

(ESTABLISHED 1857)

Wholesale and Export Manufacturers of Druggists' Sundries,

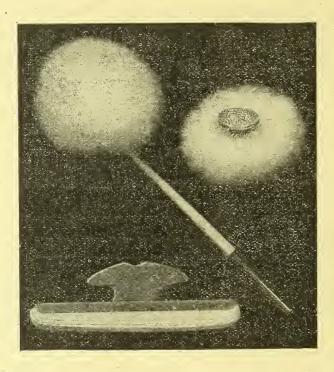
184-190 GOSWELL ROAD - - LONDON, E.C.1

And at No 1 LEVER STREET, and 377 CITY ROAD, E.C.1



## POWDER PUFFS!

Always
Latest
Novelties



Always Lowest Prices

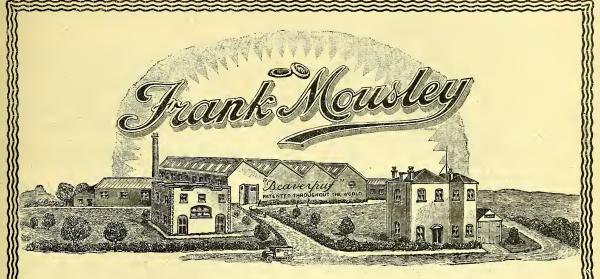
For the Coming Season and Christmas Trade discriminating buyers should visit our

STAND 16 (ENTRANCE ARCADE)
LONDON FAIR & MARKET,
Agricultural Hall, July 9th 20th, 1923.

For those unable to pay us a visit we shall be pleased to send samples or show a selection at our Showrooms—126 Southwark St., London, S.E.1

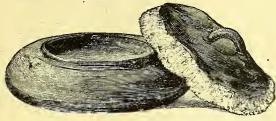
WILLIAMSON BROS.

'Phone: HOP 3419.



The Home of the Famous "Beaverpuf" Series.

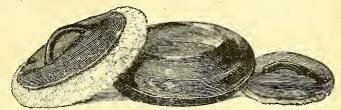
### The Largest Sale of any Puff in the World



Single Puff for Powder only, Prices ... ... 4/- and 4/6 Powder Puff, Powder Container and case combined. Cannot be crushed. Compact, Neat, Dust Proof and Clean. Made in twelve shades of leather to match bag, dress or toilet set. Finest Powder only used, specially blended and prepared in our own laboratory

Outlives any other powder puff. Always handy and ready for use. Impossible to over-powder. boxed and sealed. Hygienic, Profit-331% and 5% for cash.

> Refills, any tint of Powder or Rouge .. .. 6d. each



Double Puff for Powder and Rouge. 6/6 and 7/6. Prices

The LADY TERRINGTON, writes :-

"It might interest you to know that I am a constant user of your Beaverpu's and think them excellent apart from their 'hygienic' qualities."

MLLE, YVONNE ARNAUD, the beautiful French actress, writes:

"I am delighted with my new Beaverpuf, it is very useful and so very charming."

MISS MADGE SAUNDERS, the charming English actress, writes:—
"I have pleasure in telling you how delighted I am with your Beaverpus. I always carry one in my bag."

Write for Price List and Illustrated Booklet to-

For Foreign Markets-

Frank Mousley, "Wilderness Works," Derby Road, East Sheen, London, S.W.14. 'Phone: Richmond 1547.

For Gt. Britain and Ireland-"Beaverpuf," Ltd., Priest Bridge,

London, S.W.14.

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## Cripinate Bath Salts

Containing Isobornylalyl-Pineol.

Recommended for

RHEUMATISM
LUMBAGO
SCIATICA
SPRAINS
MUSCLE STIFFNESS

Tripinate Bath Salts do not mercly colour and perfume the bath water, they have distinct medicinal properties, and greatly stimulate the activity of the heart and blood circulation.

For full particulars and Terms

### COLE & WILSON

19 Railway Street

HUDDERSFIELD

## Four Shillings & Twopence Profit on Every Single Sale

Is there any other line in your shop or drug department that shows such a remarkable profit on each sale as

### HUMAGSOLAN

Think of the dozens of packets you would have to prepare and pack up in the ordinary way to total 4/2 profit. From every point of view it pays to handle HUMAGSOLAN. Think of the profit and then you can guarantee to every customer that HUMAGSOLAN does grow hair.

### MILLIONS OF PEOPLE EACH WEEK ARE TOLD ABOUT HUMAGSOLAN

Our vigorous Press campaign has met with a wonderful response. The public have realised that here is something more than a mere hair tonic or pomade. In HUMAGSOLAN they have an actual hair food, as proved and prescribed by the medical profession and British Hospitals. We shall be pleased to furnish you with full particulars regarding HUMAGSOLAN, trade terms etc., immediately on hearing from you.

#### **HUMAGSOLAN LIMITED**

(Sales Promotion Dept.)

Faraday House, 10 Charing Cross Rd., London, W.C.2.



A Unique Product! A Sound Policy!

## ARMAND Cold Cream Powder

#### WHAT THE CONSUMER THINKS:

"Armand is just what I've been seeking for years. I shall always use it in future."—A.M.W.

#### WHAT THE DEALER KNOWS:

"I am selling well to satisfied customers."

—An Armand Dealer.

Armand Policy recognises that the goodwill and co-operation of our Dealers is the greatest asset we can have and the soundest basis upon which to build.

Consequently we are the world over giving to the Chemist in greater profits and direct sales assistance that portion of profit usually used in forcing demand.

Your agreement with these principles has been evidenced by your readiness to come into partnership with us, and the remarkable co-operation you are giving us.

When in the course of a few months more we have together placed Armand on a basis where its sale becomes automatic your return in cash profits at I/- and I/II per box will afford a gratifying return upon the initial effort, while your dealings with us will never fail to demonstrate our appreciation of your goodwill.

E. O. Gilmore

Managing Director.

#### ARMAND COLD CREAM POWDER

In the "Pink and White Check HAT BOX." Sells at 4/and makes 1/11 profit,

#### ARMAND BOUQUET

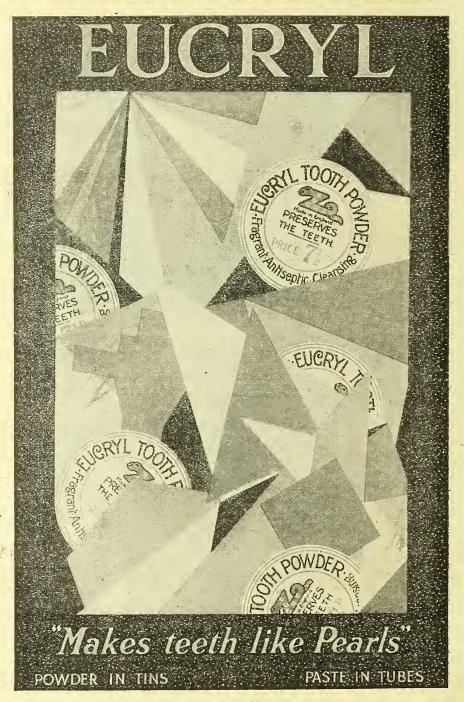
A less dense Powder, in square boxes, sells at 2/- and earns 1/- profit for the Chemist. Prices P.A.T.A.

### Florian & Armand, Ltd.

Queensway,

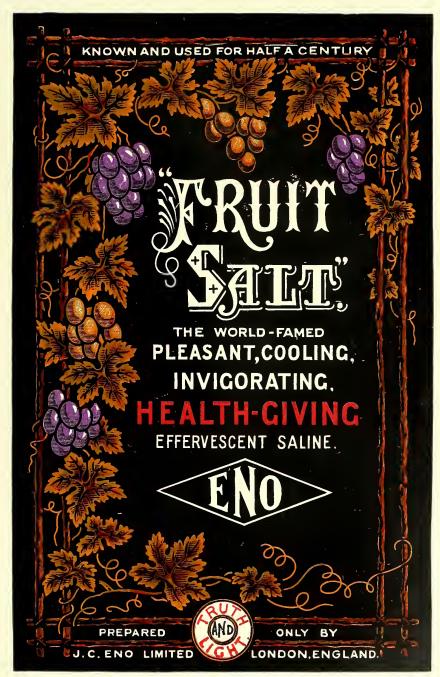
Ponders End, Middlesex.

#### A STRIKING ADVERTISEMENT



HAVE YOU HAD THIS POSTER FOR YOUR WINDOW? IF NOT—WRITE US FOR IT.

EUCRYL, LIMITED, Southampton



The words "Fruit Salt" and "Eno" are our Registered Trade Marks.

## The World's Greatest Proprietary

KNOWN AND SOLD IN EVERY COUNTRY

Your rofits will be substantially ncreased by Showing and Selling UIT SA

FOR TERMS APPLY TO SALES MANAGER

J. C.ENO LTD.

VICTORIA EMBANKMENT

LONDON

E.C.4

## CO-RE-GAY

Comfort Powder

### Holds False Teeth Firmly in the Mouth

PREVENTS SORE GUMS.

Dentists everywhere are now prescribing and sending patients to Chemists for CO-RE-GA. Sales are increasing tremendously on account of this extensive and intensive dental propaganda work. As a Dental Plate Fixative CO-RE-GA stands alone for dependability and long-lasting adhesive properties.

CO-RE-GA is a ready repeater and sells anywhere, whilst profits are not only good, but amply protected. Add to your personal prestige by handling CO-RE-GA.

#### LIKE THE DENTIST—RECOMMEND IT WITH CONFIDENCE.

IN METAL CANISTERS:

(Small)	1/6	P.A.T.A.	,30	2	n	pd	Doz. 12/-	,
(Medium)	2/6	,,	pt		28	<b>#</b>	<b>,,</b> 20/-	,
(Large)	4/3	69	put	pet	gat .	63	34/-	g

ORDER FROM YOUR WHOLESALER—or direct from

Thos. Christy & Co. (DISTRIBUTORS),
4/12 Old Swan Lane - - London, E.C.4.
SAMPLES MAILED FREE ON REQUEST.



GIVES A GOOD PROFIT ENSURES LASTING BUSINESS



unusual advertising means unusually good business in

Color CREAM
Shaving Scap

The forthcoming Press advertising campaign on behalf of Gibbs Cold Cream Shaving Soap should make it as easy to sell as it is easy to use. It is usual for Gibbs to issue something unusual in the way of advertising. The Shaving Soap advertising will certainly be no exception to the rule. Commencing with July it will appear regularly and frequently in the important newspapers and Journals of National Circulation. A British Shaving Soap containing soothing cold cream; in a British patent holder—the world's first patent and the best. These are the exceptional qualities—that will be featured strongly in—some exceptional advertising. Be sure you take the usual and very necessary precautions—carry good stocks of Gibbs Cold Cream Shaving Soap.

D. & W. GIBBS, LTD. (Dept. D.G.7)
City Soap Works, London, E.1.

## FERBER'S MEDICINAL GELATINE CAPSULES

FOR HOME AND EXPORT TRADE.

1,500 VARIETIES.

When ordering specify "Ferber's."

STOCK "BLENOSAN" CAPSULES (Santal and Kaya Kaya Compound).

ADVERTISED REGULARLY IN THE LEADING COLONIAL NEWSPAPERS.

WRITE FOR SAMPLES and PRICES to the SOLE MANUFACTURERS:

#### ROBERT FERBER, LIMITED

Carlton Works, ASYLUM ROAD, LONDON, S.E.15. ESTABLISHED 1896.

Established 1859.

### JULES DENOUAL & CO.

Wholesale and Export Manufacturers of

Medicated Lozenges and Pastilles Medicinal Gelatine Capsules True Floral Cachous.

Sole Agents for:

The Tasmanian Eucalyptus Oil Co.'s

"PLATYPUS BRAND"
EUCALYPTUS GLOBULUS OIL.

CARLTON WORKS, ASYLUM ROAD

LONDON, S.E. 15.

### A. S. LLOYD'S EUXES

(THE GENUINE).

For Shaving without Soap, Water, or Brush.



ENTERED AT STATIONERS' HALL.

#### A. S. LLOYD'S EUXESIS

FOR SHAVING

WITHOUT THE Use of SOAP or Water.

DIRECTIONS FOR USE.

Unscrew the cap at the top, and gently press the broad erd, always taking cree to do so from the bottom, by which the tube is rendered perfectly air-tight; when enough is obtained apply it to the beard either with a small soft brush or the finger, rubbing it a little; then apply the razor, and although but little of the Euxesis be seen on the face, the beard will be removed with the greatest ease and comfort. It will be found very beneficial to wash before shaying. It is not intended to make a lather like soap. When the tube is not in use, besure to screw on the cap again.

Sold in Collapsible Tubes, at 1s, 6d, and 3s. Sold in Collapsible Tubes, at 1s. 6d. and 3s. By the Original & Sole Manufacturer & Proprietor

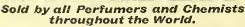
91 TO 95, CITY RD. FINSBURY, E.C.

LONDON, Late 27, GlassSONS

ROTO 33 RERNERS ST. OXFORD ST. W. ENGLAND.

house Street.

PRICE, 1s. 6d



R. HOVENDEN & SONS having purchased, under an administration suit, the Business of the late A. S. LLOYD, with the Receipt, Trade-Mark, and Goodwill of the celebrated Euxesis, the Trade are cautioned that the original and genuine Euxesis is now manufactured at our Factory ONLY and may be obtained at either of our Warehouses.

#### PRICES ON APPLICATION.

NOTICE.—THE GENUINE A. S. LLOYD'S EUXESIS bears a label printed in BLACK only on a Yellow ground, with our Trade Mark at the bottom, as illustration.

Proprietors: R. HOVENDEN & SONS, LTD. LONDON: 29-33 Berners Street, W.1; and 89-95 City Road. E.C.

#### Treatment ALOPECIA

No treatment of this troublesome complaint has proved more successful than the application of "LITTO" Alopecoid.

This wonderful remedy—prepared by the manufacturer of the famous "LITTO" hair preparations-first checks any further spreading of the complaint, then stimulates the roots of the hair and little by little new fine white hair begins to grow on the bald patches, which gradually attains the colour of the rest of the hair. If "LITTO" Alopecoid is applied at an early stage the complaint can be overcome in six to eight weeks-we give a signed guarantee to this effect.

This treatment is now extensively applied by hair and skin specialists all over the country.

May we send you particulars & trade terms?

#### LITTO LABORATORIES

2, Newington Green, London, N.1.

Established 1795.

Works: GRASSE (France) & BEYRUT (Syria).

Essential Oils-Synthetics. All Raw Materials for Perfumery.

Absinth
Almond, bitter,
Angelica [S.A.P.
Basil Bay Bergamot Bois de Rose femelle Cajuput Caraway Cinnamon Cloves Copaiba Costus Cubeb Fennel Geranium Honey Hyssop

Laurel Lavender Lemon Mace Melissa Neroli big and Syn.
Orange
Otto de Rose
Patchouli
Peppermint Rosemary Rue Sandalwood Spike Lavender Tansy Tarragon Thyme

Olive, Peach Kernel, Sweet Almond Oils Floral Waters.

Vetivert

Wholesale and Export only.

LAUTIER FILS, Ltd., 4 Denman St., London Bdg., S.E.1 Tel. Add.: "LAUTIERT, PHONE, LONDON." Telephone: Hop 2819. 

## A. S. LLOYD'S EUXESIS

For Shaving without Soap, Water, or Brush.

#### CAUTION to the TRADE

Labels on the genuine EUXESIS not only bear signature of A. S. Lloyd in Black Ink, but also "Prepared only by his Widow and signature of 'Aimée Lloyd'" in RED.



Sole Manufacturers and Proprietors:

## AIMÉE LLOYD & Co.,

23 PANTON STREET (Formerly named SPUR STREET),

HAYMARKET, LONDON, S.W. 1

N.B.—When ordering from Wholesale Houses write LLOYD'S EUXESIS (WIDOW'S).

<del>ଷ୍ଟର</del> ଜଣ ଜଣ

#### PRICE'S NEW INTRODUCTION TO THE 'SQUARES' SERIES



PRICE'S EAU DE COLOGNE TOILET SOAP.

In response to repeated requests we have introduced an addition to our popular "Squares" Series in the form of

#### PRICE'S EAU DE COLOGNE TOILET SOAP

(as illustrated).

The popularity of Price's Old English Lavender Squares is as pronounced as ever, and we feel that this addition to a favourite Series will be welcomed.

Eau de Cologne Squares are put up in the wooden boxes in toilet size only. The prices are identical with those of Old English Lavender.

12-cake boxes - 39/9 a gross. 6-cake boxes - 41/3 a gross.

Details and quotations on application to PRICE'S, Battersea, S.W.11.

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#### " Jackel's Cream



CRYSTALLISED CREAM Trade Mark attached to each bottle.

(without Grease) for THE HAIR

> Sold Everywhere Established 1883.

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Jackel's Cream " fixes the hair in any desired position; is unexcelled as a dressing and does not soil the headwear. It removes Scurf and Dandruff, keeps the scalp healthy, and promotes the natural growth of the hair while maintaining its softness and brilliancy.

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Prices for Wholesale and Export Houses on application.

Jackel et Cie (of Paris) Ltd.

> Sauchiehall Street, GLASGOW.

#### "BEAUTY IN A CRATER" CONTEST

The following Traders have received Cash Awards in connection with the above:-

MILDRED & RENEE, Gloucester Road Stn. HOLT, Victoria Arcade, Victoria, S.W. BOOTS, Cash Chemists, George St., Richmond. MORRIS & LEE, Parsons St., Banbury, Oxon. F. WALTON, 2 York Place, Birkenhead. BOOTS, Cash Chemists, Taunton, Som. W. M. & M. SAWNEY, St. Mildred's Salon, St. Mildred's Road, Westgate-on-Sea.

G. BLAND, High Street, Leicester. J. C. BELL, 12 Bond Gate, Darlington.

For Trade Terms and full particulars write:-

PHYLLIS EARLE LTD. 15 NORTH AUDLEY STREET, W.1.



#### NOW BACKED BY A SPLENDID NEW ADVERTISING OFFER

LEAVER'S TEREBENE SOAP has sold well for years on merit alone—sold just on "Customer-recommendation." Now it is going to be widely advertised, and there is but little doubt that in a very short time it will be one of the most called-for of toilet soaps. To further interest the Trade we are making a

#### Special FREE BONUS offer - for ONE MONTH ONLY.

6 Tins (1s. 3d.) Talcum-Cleaver.

12 Miniature Tins ,, ,, ,, ,24 Samples of Terebene Soap. Lithographic Showcards.

2 doz. Tins of Talcum-Cleaver at 10/3

Boxes of 3-in Terebene at 12/6 " Tabs. of Bath Terebene at 75/-

(COST 39/3)

We give you as FREE BONUS

4 Boxes of 3-in. Terebene Soap.
12 Miniature Tins of Talcum-Cleaver.

24 Samples of Terebene Soap. Lithographic Showcards.

Order now and be ready for the increased demand.

A postcard brings full particulars of this profitable opportunity F. S. CLEAVER & SONS, LTD., TWICKENHAM, MDX., ENGLAND. Makers also of the famous Talcum-Cleaver. Established 1770.

### "SAMBOV" TONIC

is made from the purest materials which combined, provide a genuine tonic, unrivalled in its beneficial effect upon the hair and scalp. It is called "a wonderful grower," and may be used by young and old without harm; is especially good in relieving irritation, and cleansing the scalp. It preserves the colour of the hair.

To be obtained from maker on sale or return terms, but is a ready seller. Everyone likes "Samboy."

"SAMBOY," 22 STRAND, RYDE, I.W.

#### ALBERT PAGNEIZ

Puff Manufacturer 7a PLACE DE LA CHAPELLE

Inquiries invited to London Office:

BRUSSELS:

33 Chingford Road, London, E.4

#### HAVE YOU GOOD STOCKS OF KOKO FOR THE HAIR?

During June and following months we are advertising extensively in all the London Dailies, besides many of the Provincial Papers, Magazines

and Women's Journals.

RETAIL 1/6, 3/- & 5/6

On P.A.T.A. List.

Prices will not be reduced without giving ample warning to the trade, enabling them to clear stocks. orders for Koko and Shampoo Powders should be sent to our Sole Distributing Agents, MESSRS.

BUTLER & CRISPE. 80/82 Clerkenwell Rd., London, E.C.1.

KOKO-MARICOPAS CO.. Ltd. 16 Bevis Marks, London, E.C.3



## ALZA VANISHING CREAM

The Best Value in Toilet Creams to Retailer and Consumer.

In jars. Retail 1/3. Cost 10/- per doz.

In Dainty Aluminium Boxes.

Retail 3d. Cost 2/- per doz.,

21/- per gross.

### RUBWEL OINTMENT

Household Ointment and Athletes' Friend.

Useful in case of Abrasion, Sunburn, Stings of Insects, etc.

In Three Sizes.

4d. Retail. Cost 2/8 per doz. 9d. ,, 6/7 ,,

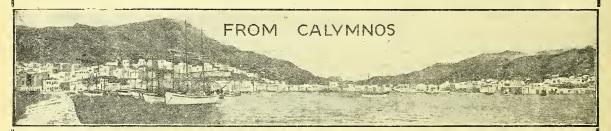
1/- ,, ,, 10/- ,,

Assorted parcels of Alza and Rubwel, or one line only, with Show material, 20/carriage paid, less 5 per cent. discount (7 days). Obtainable from your Wholesalers,

J. WOOLLEY, SONS & CO., Victoria Buildings, MANCHESTER.
MAY, ROBERTS, LIVERPOOL and LONDON.

Manufactured by

THE ALZA MANUFACTURING CO. Chorlton-cum-Hardy, MANCHESTER.



## DIRECT TO THE ACTUAL RETAILER

WRITE FOR TERMS.

Buy from the Importer

Being the actual Shippers of Sponges from the Mediterranean's we can offer you distinct advantages in variety and Price. Large and continuous shipments of Fine Turkey and Honeycomb direct from our own Fisheries, graded and packed in our warehouses.

THE ALZA MANUFACTURING CO.

Chorlton-cum-Hardy, MANCHESTER.

MANUFACTURERS- OF Telephone: CHORLTON 27

ALZA TOILET CREAM AND SPECIALITIES. RUBWEL OINTMENT AND EMBROCATION.

DEPÔT OF
SAPOUNAKIS & COOPER,
39, GRAY'S INN ROAD, LONDON, W.C.1.

## The Enolin proposition merits your investigation

40/6 profit on 57/-



HERE'S a proposition that is worth while—easy sales and quick sales—easy profits and quick profits.

Big profits too—example, 40/6 on every 57/- is admittedly very good. The new Bonus scheme of 13 to the Dozen, combined with the attractive terms, make Enolin one of the most profitable lines to-day. Chemists have already realised the benefit of this concession and orders are continually coming in. Get your share of the profits to be made on this easy seller.

The public know the value of Enolin tooth paste and are asking for it everywhere. Stock up with Enolin tooth paste—send for full list of terms to-day.



TOOTH PASTE

ENOLIN LIMITED.

201 King Street, Hammersmith, London, W.6

'Phone: Hammersmith 1605: Telegrams: "Unoenolin, Hammer, London."

## UNIQUE FREE GIFT ADVERTISING THAT BRINGS CUSTOMERS TO YOUR DOOR.



EDWARDS' HARLENE, Limited

20, 22, 24 & 26 LAMB'S CONDUIT STREET, LONDON, W.C. 1.

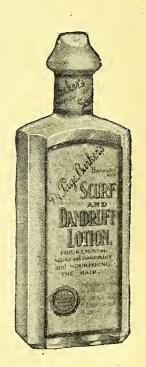
## Your great opportunity in the campaign to



Dr. Page-Barker's Scurf Lotion is making money for Chemists everywhere, because it never fails to remove scurf, and the money-back guarantee you are authorised to make induces even the sceptic to

make the necessary trial.

Display Page-Barker in your window, and thus bring into your shop the scores of people who want to rid themselves of the irritation under which they are suffering. Think how easily you can acquire 44% profit. Once a customer is in your establishment his attention is secured, and his interest can be quickly aroused. Use Page-Barker Showbill for windows and doors. We supply these free on request. They are advertising material of unusual attractiveness, that will bring you fresh business and prepare the way for sales. If you do not stock Dr. Page-Barker's Scurf Lotion, order a supply at once, either direct from us or through your usual Wholesaler. demand is becoming enormous, and you should get your share of this business. Price, 18/- per dozen. Retails at 2/6 per bottle. On orders of 3 dozen we give a bonus of three 2/6 bottles free. Showcards with every order:



## Dr. Page-Barker's Scurf & Dandruff Lotion

GUARANTEE:

We, The Page-Barker Co., 252b Gray's Inn Road, guarantee that in any case in which Dr. Page-Barker's Scurf Lotion fails to remove and entirely eradicate scurf, we will refund the purchase price in full.

Distributors and Sole Selling Agents:

THOS. CHRISTY & CO., 4-12 Old Swan Lane, London, E.C.4.



## Don't Lose Your Rightful Profits

THE National Advertising Campaign for NUCTONE, announced in previous issues, commences next week. Now is the time to ensure your profits by putting NUCTONE on display and making sure you have sufficient stock to meet the certain demand.

Thousands of pounds are now being spent on advertising NUCTONE. This sum may justly be regarded as an investment that cannot fail to bring you in a good return.

Take advantage of this NUCTONE advertising from the very start. An immediate display means immediate sales. Don't miss the profits that are rightly yours.

Remember that NUCTONE gives you a double advantage, first by the substantial profit on each individual sale, and second because you are protected by the NUCTONE guarantee under which you can recommend NUCTONE with perfect confidence to your grey-haired customers, certain that they will be entirely satisfied.

#### GUARANTEE

The Manufacturers guarantee that NUCTONE is absolutely free from any combination of lead and sulphur, and contains no ingredients that can possibly injure the hair. NUCTONE can therefore be recommended with entire confidence to your customers.

## Vuctone for GREY HAIR

Retail Price 6/6 per bottle. Price to you 52/- per doz.

In three grades:

NUCTONE for dark hair.
NUCTONE ECLAIRE for fair & auburn shades.
NUCTONE CONCENTRE for Gentlemen's

Wholesale Distributors :

HENRY C. QUELCH & CO. 4-5 Ludgate Square, London, E.C.4

Manufactured by
STEWART, GOODALL & DUNLOP, LIMITED.
4 Dering Street - London, W.1



# "Specialty" Packed Goods

Highest Quality Competitive Prices

Before renewing your orders for any Line of packed Goods—Liquid Paraffin, Petroleum Jelly, Ointments, etc.—write for our samples and latest quotations. Being one of the largest importers of White Oils, we can quote keenest prices whilst maintaining the highest quality and most attractive packings. A postcard will provide the proof.

#### LIQUID PARAFFIN

A brilliant water-white oil (s.g. 890) of the highest viscosity, conforming strictly to all B.P. requirements and brilliant at o°C. Packed in white oval, flat, or panelled flat bottles, which emphasise the brilliancy of the contents.

#### OINTMENTS

All B.P. and other Ointments, Cold Creams, Coconut Oil, etc., supplied either in flat decorated tims or screw-capped opal jars—also in bulk in r-lb., 7-lb. and 28-lb. free tims.

#### EMULSIONS

Non-separable Petroleum and Cod Liver Oil Emulsions, with or without hypophosphites. Petroleum Emulsions in 33% and 50% strengths. Cod Liver Oil Emulsions in 25% and 50% strengths. Packed in special widemouth oval shape bottles in all sizes, with white viscose caps.

Any of the above supplied in bulk at competitive rates. Send for samples, latest prices and specimen labels.

### Specialty Dept.

Anglo-American Oil Co. Ltd.

Albert Street, Camden Town, London, N.W.1.

Telegrams:
"Nufinjol, Norwest, London."

Telephones: Hampstead 4046-4047. PHAVE YOU?

RECEIVED?

The Great

## ILKODONO COMPETITION

THE SPECIAL PARCEL

for Window and Counter Display? In addition to the articles set out below, this parcel contains handsome showcards, "cut-outs," streamers, wall bills, dummy cartons, and booklets for distribution.

### 100% PROFIT

we Invoice this Parcel at £3—you sell the contents for £6—a clear 100% Profit with all the advertising matter free. Everything is done, therefore, to help you make a success of this Competition. Be sure and act at once. The contest closes Aug. 3ist—there is time to make a good effort—but uo time to lose!

#### THE SPECIAL =PARCEL=

Wholesale value £4 4s. 6d.

dozen ł-doz. 4/6 size Silk-odono @ 36/- per dozen ...

dozen ½-doz. 1/6 size Silk's Brilyon @ 12/- per dozen

3 doz. 4d. Shonpone Sachets @ 2/6 per dozen ..

£4 4 6

0 0

12 0

**10 0** 

6 0

2½ doz. Shonpone Sachets to be given Free to purchasers of Silkodono.

One with 2/6 bottle.
Two with 4/6 bottle.
No Sachets to be given with
1/6 size.

PRIZES TO BE WON BY

R ASSISTANTS

HE GREATEST PUBLICITY SCHEME ever organised in connection with a Hair Preparation has already made tremendous headway throughout the country. Chemists everywhere are reaping the advantage of the huge national press campaign—which brings an insistent demand and 100% profit to traders.

TO THE PUBLIC— 1st Prize, £25. 2nd Prize, £15. 3rd Prize, £10 10 Cash Prizes of £1. 80 Prizes value 10/- each.

10 Cash Prizes of £1. 80 Prizes value 10]- each.

TO THE TRADE1st Prize, Cheque £10 and 6 doz. Silkodono (£6).
Assistant, Cheque £4. In all £20.
Assistant, Cheque £2. In all £10.
Assistant, Cheque £2. In all £10.
3rd Prize, Cheque, £3 and 2 doz. Silkodono (£2).
Assistant, Cheque £1. In all £6.
Assistant, Cheque £1. In all £6.
The Trade Prizes will be given to those serving the 1st, 2nd and 3rd Puhlic Prizewinners.
Independent Prizes for best Window or Counter Independent Prizes for best Window or Counter Displays—1st, £5; 2nd, £3; 3rd, £2.

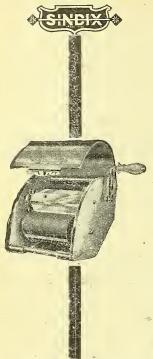
AVE you realised to what extent you can turn this splendid public contest to good and profitable account? The large, striking advertisements in the leading British newspapers are sending customers into the shops—have YOU a plentiful supply of sending customers into the shops—nave 100° a prentint supply of SILKODONO to meet the demand? Just think—in the unthinkable possibility of your selling only one bottle, the customer who buys it may be the First Prize Winner—a fact that will earn you and your assistant prizes. Actually, by announcing the "Silkodono" Competition, and pushing the Sales of the Magic Hair Remedy, you will make a substantial turnover on which you will receive 100% Profit!

IT WILL PAY YOU TO GO "ALL-OUT"

and dip your hands into the handsome returns which the "Silkodono" Competition offers to you. Customers will be attracted to your store-your assistants will be keen to win a prize-you will benefit in any case—if you make a big effort.

SILK'S TOILET CO., 8 & 9 Red Lion St., London, W.C.1.

Telephone No.: CHANCERY 8095. -



## It will pay you to get acquainted with Sindix goods.

The Stropper has unique and attractive features. The leather-covered rollers move from right to left while revolving, so that it "Strops like a barber."

The Hair Brushes are made entirely of metal—highly finished polished aluminium back, the "bristles" are clumps of fine drawn silvery wire. Made in both military and handled shapes. An ornament to any dressing table, the Sindix hair brush lasts for ever, and can be sterilised or cleaned in an instant. It has valuable massage properties, and attracts interest at once.

The Sharpening Block for rubbing on strops, Sindix Razor sets and Sindix Blades make friends wherever shown.

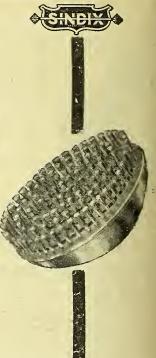
Sindix goods are now being advertised in twenty widely circulated publications, and our publicity will be increased as rapidly as the articles can be placed in the dealers' hands.

There is a very liberal profit—a rapidly growing demand—and a certainty of satisfaction in handling Sindix goods.

Order through your wholesaler or write direct to:-



5, John Street, Adelphi, London, W.C.2.



HAIR BRUSHES

made entirely of metal.

STROPPERS for Gillette-type

blades.

MDS@ADS@ADS@ADS@

You will receive enquiries for

#### PYORRHOCIDE TOOTH POWDER

It is now being advertised. All Wholesalers stock it.

Trade price - 48/- doz.
Retail price - - - 5/-

Showcards on application.

American Drug Supply Co. Ltd. 40-42 Lexington Street, London, W.1

**CADSCADS** 

Only need showing

Sell Themselves



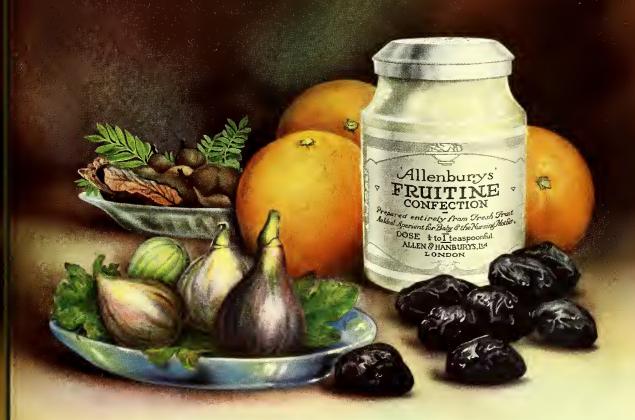
Finest quality Concentrated Persumes made from natural flower oils

PARMA VIOLET LILY OF THE VALLEY WALLFLOWER WHITE LILAC WHITE ROSE & SWEET PEA Free from spirit. Supplied in High-Class Rod-Stoppered Hexagon Bottles.

RUVOIRE ET CIE

154 Church Lane, Harpurhey, MANCHESTER.

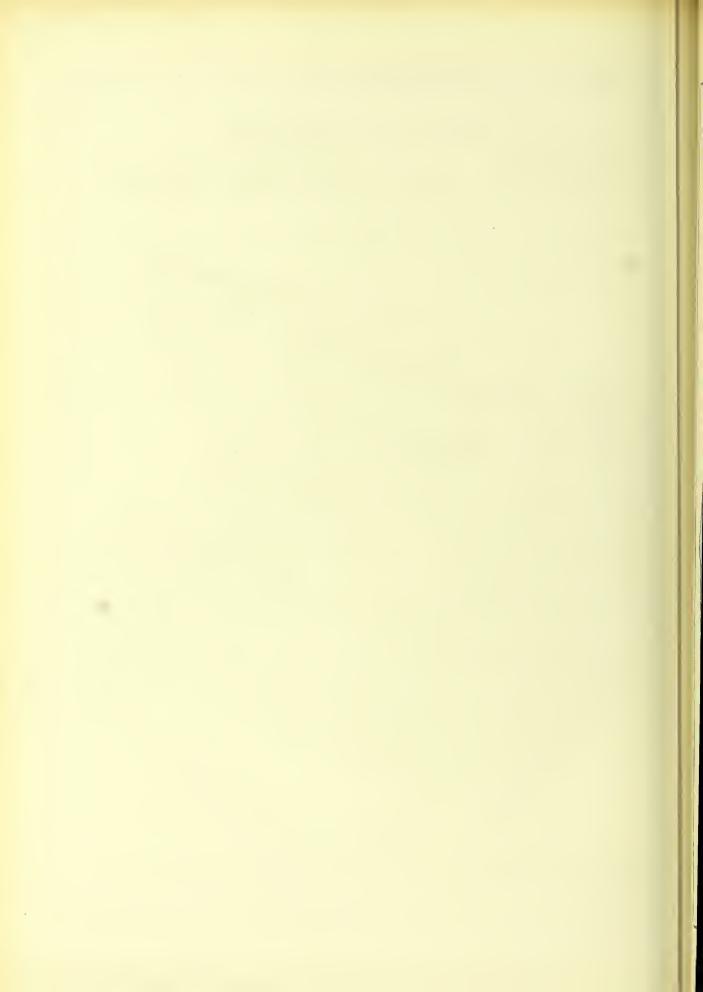
# Allenburys' FRUITINE CONFECTION.



A fruit laxative for Infants and Young Children.

Figs, Prunes, Tamarinds and Sweet Oranges.

ALLEN & HANBURYS LTD 37 Lombard St E.C.3



### HOVENDEN'S SWEET LAVENDER SOAP

Manufactured at our Factory from the purest materials. A high-class super-fatted Soap delightfully perfumed. Unequalled for the complexion.



Prices subject to 21% Cash Discount.

#### R. HOVENDEN & SONS, Ltd., LONDON

29, 30, 31, 32 & 33 BERNERS ST., OXFORD ST., W.1.

And 89, 91, 93 & 95 CITY ROAD, FINSBURY, E.C.1.

Tel.: Museum 2810 (3 lines).

Factory: 41 to 53 BRITANNIA ROW, ISLINGTON, N.1. Tel.: Clerkenwell 1260 (2 lines)

### Soap patia

THREE SIZES Bath

Toilet

P.A.T.A. 1 ROTECTED PRICES

GROSS LESS 10%

.. 9d.

80/~ .. 5d. 44/6

Visitors  $\cdots$   $2\frac{1}{2}$ d. 22/3 THE LAST WORD IN PERFUMED SOAP. EACH TABLET WRAPPED IN CELLOPHANE.

Write for Samples to

WHEEN SONS, LTD.

Toilet Soap Makers.

LONDON, S.E.8.

Powder ⊕ OF ALL GRADES ♥ ALL PURPOSES

FOR SAMPLES AND PRICES APPLY TO:

W. Harrison & Co., Ltd. 16 MINCING LANE, LONDON, E.C. 3:

And at

14 MARKET PLACE, MANCHESTER.

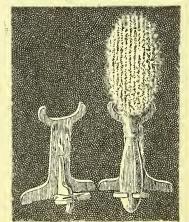
## CELLULOID and BONE

SAMPLES AND PRICES ON APPLICATION.

STANDARD BRUSH CO.

> 121a Bunhill Row, LONDON E.C.I.

> > <u>ଏହା ଦାସ ସମୟ ପ୍ରତା ପର୍ବା ପ</u>



Regd. Design.

Patent applied for

STUDY THE VALUE OF

PERSPECTIVE IN YOUR WINDOW.

The Samways Hairbrush Display Stand

is Ideal for displaying

HAIRBRUSHES and HAND MIRRORS.

It will hold them in any of three positions. Front or back can be shown or the handle may be placed upwards. Price 15/- per doz.

Ack your Wholesaler for them. If any difficulty, send to us, allowing 6d. for postage. Any surplus will be promptly refunded

SAMWAYS MANFG. CO., Ltd. 256 Broad St., Birmingham.

Only firm selling in bulk all the well-known and exclusive high-class perfumes, including-

Chypre, Lorigan, Amber, etc.

TRIPLE EXTRACT guaranteed manufactured from pure alcohol and natural flower essences, at prices below those imported from France.

Natural Essences & Essential Oils for all Toilet Preparations.

NO SYNTHETIC.

For quotations and samples apply to Sole Concessionnaires of

BERENGER FILS PARIS & GRASSE (Established 1810)

5 HANOVER ST., REGENT ST., W.1.

Telephone - . . MAYFAIR 1060.

# SAL HEPATICA

THE STANDARD SALINE LAXATIVE.

### IPANA TOOTH PASTE

"Makes Teeth Last Longer."

### PASTILLES GASTROGEN

(Digestive Tablets).

### ZIRATOL

(The Universal Antiseptic and Germicide).

BRISTOL - MYERS CO., MANUFACTURING NEW YORK.

ENGLISH AGENTS:-

STONE-BALLANTINE, LIMITED, 13, Well Court, Queen Street, London, E.C.4.

Obtainable from all Wholesalers and Retail Chemists.

# A BIG SELLER WITH A BIG PROFIT



WHOLESALE PRICES

2/9 doz. or 30/- gross.



In Dainty Aluminium Boxes with screw lids, contents approx. \( \frac{1}{2} \) oz. Most convenient for Ladies' handbags.

THIS LINE HAS CAUGHT ON WELL IN LONDON, AND WE GUARANTEE IT TO BE THE RIGHT GOODS. A REALLY ATTRACTIVE PROPOSITION.

Other Lines we manufacture;
FACE POWDERS
COMPACT ROUGE
HAIR LOTION, &c.
Let us quote you Terms 2½ % Month
3½ % 7 Days

### THE PARKSIDE MFG. CO.

58 Paris Gardens,

Blackfriars, London, S.E.1

CARR. PAID in lots of 6 doz.

anywhere in the

British Isles, with display

cards.

# A Pleasant and Effective Germicidal Shaving Soap

yielding a satisfactory protected profit.

"Dermaseptic" Shaving Soap can be retailed by pharmacists only.



### TERMS ON REQUEST

"P. D." Outers Series, No. 6.

PARKE, DAVIS & CO., 50-54, BEAK STREET. LONDON, W.1.



# LORIMER-MARSHALL

- LIMITED -

12 Tower Hill, London, E.C.3

WORKS TELEPHONE. NEW CROSS 2119 TELEGRAMS
LORIMARSCO-BILGATE, LONDON

# Our Advertising Still Goes On

telling over four million people that:

To get the Pro-phy-lac-tic Tooth Brush, originated and made by the Florence Manufacturing Co., Florence, Massachusetts, U.S.A., since 1880, they must look for the hyphenated word Pro-phy-lac-tic stamped on the handle of each brush and printed in red on the YELLOW Box.

This widespread publicity is creating new customers for the Pro-phy-lac-tic Tooth Brush in the YELLOW Box-customers ready and able to buy "the only brush that really cleans the teeth."

Tooth Brush

only in the YELLOW Box

Manufactured by the Florence Manufacturing Co., Florence, Mass., U.S.A.

Droppy factic

Sold through the Wholesale Houses Only

WILLIAM E. PECK & CO., Inc. Bartholomew Close, London, E.C.1

In 3 sizes—adult's, youth's, and child's; in 3 textures of bristles-hard, medium, or soft; one quality only-each in its individual YELLOW Box, with hook hanging.

Price to the Public, 2/6

To the Retailer A FULL TRADE PROFIT



# Druggists' Sundries

# SPECIAL LINES for the SEASON

HAIR BRUSHES.

No. HAIR DRUSHES.				
583.	Ladies', ebonised wood back 11 rows bristle per doz. 22	0		
598.	11 20	Ŏ		
561.	real short hade	Ŏ		
587.	Gents' (Military shape) ebonised wood back 9	Ö		
	Golde (Minday shape) soonised word said.	-		
593.	,, real ebony 11 ,, ,, 36	0		
TOOTH BRUSHES.				
No.	Per doz. No Per do.	z.		
747.		6		
<b>700.</b>	, 4 , 6 0 707. , 4 , 7	6		
701.	,, 4 ,, 7 0 734. ,, (London 4 ,, 8	0		
	DRESSING COMBS.			
No. Per doz. No. Per doz.				
320.	D1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6		
285.		0		
340.		6		
J 10.		•		
RAKE COMBS.				
No.	Per doz. No. Per do	•		
282.		b		
224.	,, celluloid 8 by $1\frac{3}{4}$ in 8 0   174. White celluloid 8 by $1\frac{3}{4}$ in 14	0		
	POWDER PUFFS.			
No.				
1749.		0		
	,, fancy voile ,,, 12			
		0		
		0		
	,, , , , , , , , , , , , , , , , , , , ,	0		
		0		
		0		
1748.				
	per doz. $6/6$ $9/6$ $12/ 14/ 17/ 23/ 32/-$			
1751	Flat Wool Puff, with ribbon band, each in transparent envelope	-		
1751.	SIZES 13-in. 2-in. 23-in. 33-in. 33-in.	1.		
	per doz. 3/- 3/6 4/6 6/- 7/			
No.	POWDER PUFF BOWLS.			
1763.	Puff Bowl, glass, engraved, $3\frac{1}{2}$ -in per doz. 54	0		
		0		
	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	Ō		
	5 : 79	Ŏ		
	4-in. 4½-in. 5-in. 6-in. 7-in	١.		
1771	D 1D d 1 1 1 1 1 01/ 00/ 24/ CO/ 70.			
1//1.	Bowl Puffs, to suit above bowls per doz. 21/- 28/- 34/- 60/- 72/	-		

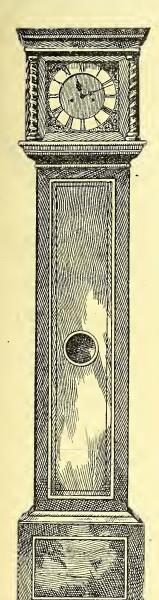
CARRIAGE PAID ON ORDERS OF £3 AND UPWARDS.

A discount of 5% for prompt cash is allowed on all amounts of ro/- and upwards. Money returned if goods are not satisfactory.

Write for New Price Lists of Druggists' Sundries, Toilet Requisites, Rubber Goods, Cut Sheet Rubber Appliances, etc.

91 and 92 GREAT SAFFRON HILL,

# Hntiques



The joy of Antiques is not in their age but in their CRAFTSMANSHIP.

In the 18th and early 19th centuries an employer and his workers were proud of their craft, not ashamed of production, as many are today, when Limited Companies in the rush for money have caused Factories to become an eyesore to the countryside.

An exception to this is the ADDIS WORKS, which is still an individual business. inherited direct from father to son since 1780—the age of craftsmanship,

Production for the money alone will never have the dignity of appearance of productions with the heart of the craftsman in them.

This is the secret of the appearance and quality of

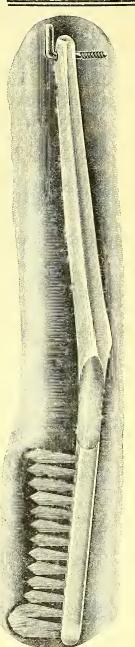
### "ADDIS PROPHYLACTIC"

Reg. No. 593367.

### BRUSHES.

A Factory whose workers' ambition is to maintain the craftsmanship held by their forbears.

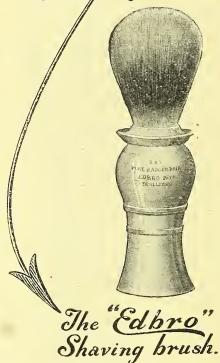
Obtainable from all Wholesale Houses.



# ROBT. ADDIS & SON

Brush Works, Hertford.





POINTS :-

- 1. Awarded certificate of Institute of Hygiene.
- 2. Hairs permanently fixed by our patent process.
- 3. Sterilized against anthrax by the "EDBRO" process.
- 4. Quality unsurpassed. Prices competitive.
- 5. British made by British Labour.

### EDWARDS BROS.

SPECIALISTS IN THE MANUFACTURE
OF HIGH-CLASS TOOTH & SHAVING
BRUSHES.——Enquiries Solicited.

63 St. Paul's Road, London, N.1

Telephone - DALSTON 1311



# You can depend steady sales

HE demand for the Sorbo Sponge is now thoroughly established. Week by week the Sorbo Sponge brings you regular profits. And there is endless opportunity for doing fresh business in this profitable line.

Every single person who enters your shop is a possible customer for a Sorbo Sponge.

Just indicate its unique qualities, the very low price, durability, absorbency and softness. Few can resist the wonderful economy of a Sorbo Sponge. If they use a sponge, they need a Sorbo Sponge.

And remember, there's a handsome profit of  $33\frac{1}{3}\%$  for you on every one you sell.

THE MOST ABSORBENT RUBBER SPONGE

Retail Prices: No. 1, 1/-; No. 2, 1/9; No. 3, 2/6 No. 4, 3/9. Bath Sizes: No. 4R 5/-; No. 5, 7/6

### Sorbo Rubber-Sponge Products, Ld.

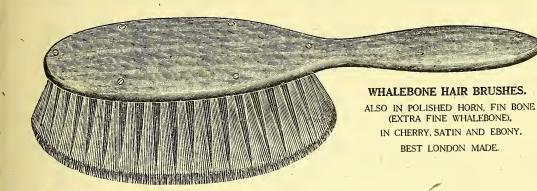
Sorbo Works, Woking, Surrey.

London Office 24 Walbrook, E.C.4.

TOOTH BRUSHES

BEST LONDON MADE,

IN TRANSPARENT HANDLES, PURE STIFF BRISTLE.



# FOR ANY OF THESE LINES

WRITE TO

# JOHN FREEMAN

Wholesale Brush Manufacturer

10 Moor Lane, London, E.C.2

Factory - - WALTHAMSTOW, ESSEX.

THE MOST COMPLETE RANGE IN THE TRADE.

Samples and Prices on application
Phone London Wall 1656.

### WHOLESALE & EXPORT ONLY

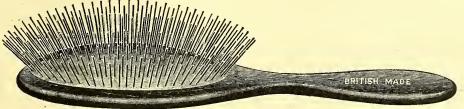
WE INVITE YOUR ENQUIRIES.



SHAVING BRUSHES.

IN BRISTLE, PURE AND IMITATION BADGER.

ALSO
BRISTLE, STRING BOUND
BEST LONDON MADE.



RUBBER CUSHION HAIR BRUSHES. BEST LONDON MADE.

In Bristle, Whalebone and Fin-Satinwood or Rosewood Finish.

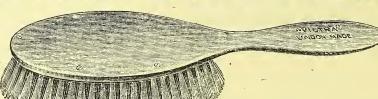
# Opportunity for Quality Trade.

SPLIT HORN

# HAIR BRUSHES

BALL CUT

per dozen.



STRAIGHT CUT

57/-

per dozen.

SATINWOOD,

SCREWED BACK, " VICTRA"

PERFECT FINISH,

The mark of Merit.

### **EDWARDS** SONS &

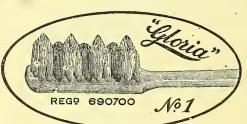
WHOLESALE DRUGGISTS SUNDRIESMEN.

14 - 18. Nile Street, City Road. London.

Telephone: Clerkenwell 5230, 5231, 5232.

Telegrams: "Medicine, Nordo, London."

# NEW DESIGN.



### ADVANTAGES:

Used up and down on the teeth it cleans in between them, and if pressed down hard the bristle will not crush.

> Short knots in extra hard white, yellow or black bristle, long knots always white. Ventilating holes in back and hole in handle for hanging up. Sterilised and sealed in transparent Carton.

PRICE 17/- dozen; 19/- Hard. MINIMUM RETAIL 2/3 each; 2/6 each.

Castle Mills, Axminster, Devon.

# "ROSE EMOL" SOAP, This is more than a high-class Toilet Soap, The ingredients used in its composition make it a really effective SKIN and COMPLEXION SOAP.

THE PUBLIC DEMAND IT. Good Selling Line. Well advertised. 8d. per Tablet. Trade Prices: 6/3 per doz., 3 doz. lots; 6/- per doz., 6 doz. lots. Carriage paid on £3 orders. PEREMOL, LTD., Great Glen, Nr. LEICESTER.



### MUD versus RHEUMATISM.

MUD Versus RHEUMATISM.
All sufferers from RHEUMATISM, Scalitica, Gout, Arthritis, Neuritis Lumbago, etc., should send immediately for full particulars of PISTANY RADIO- MUD FOR HOME ACTIVE Remarkable results have been achieved and Doctors everywhere are recommending it. "The Lancet" writes—"We have made a trial of the mud on a had case of FIBROSITIS of the elbow which was proving resistant to treatment by other means, and the result certainly was encouraging."

HANSENS LABORATORY Ltd., 61 St. Thomas's St., London, S.E. I Information Bureau for the Pistany (Pöstvol) Wells Czecho-Slovakia

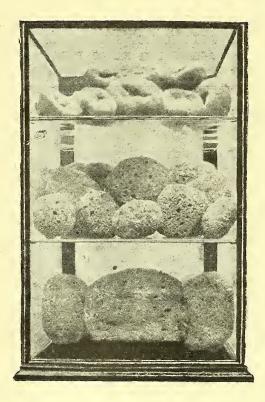
### G. B. KENT & SONS, LTD.

Are known the World over as the Largest Manufacturers of

RITISH

Please write for full Particulars to-

75 Farringdon Road, E.C.1.



Make sure that your case contains only the best quality Sponges at best prices by dealing with us. Call and inspect our stock, at

25 FINSBURY ST., CHISWELL ST., LONDON, E.C.2,

Telephone: Clerkenwell 5428.

# The Sponge Fishing & Importing Co., Ltd.

(Societe Anonyme pour la Peche et L'Importation des Eponges)
Incorporated in Belgium.

Buying Branches at Sfax, Tripoli, Kalymnos-Symi, Hydra, Batano, Nassau, & Florida.

Selling Branches at Brussels, Paris, Barcelona & Hamburg.

NO CONNECTION WHATEVER WITH ANY OTHER FIRM.

Telegraphic Address:
"DAQUEZ, ALD
LONDON."

### ESTABLISHED OVER A CENTURY.

Telephone No.: AVENUE 97

# I. & M. COHEN

(INTERNATIONAL SPONGE IMPORTERS, LTD.)

BRANCH

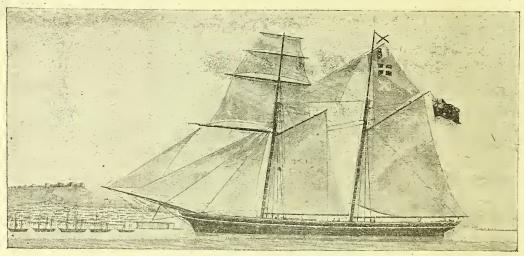
# Sponge Merchants, Importers and Exporters,

CHAMOIS LEATHER DRESSERS, and

PROPRIETORS of the ABLUTONIC BRAND of "RUBBER SPONGES."

AGENTS FOR NADCO DYES.

Contractors to the Government, Railways and Steamship Companies, etc.



"Welcome," of London, I. Cohen, master, entering Smyrna Bay, 1331.

In the year 1864, I. & M. COHEN were the first and only House to import sponges direct from the Mediterranean in their own ship, the schooner "Welcome."

### IMPORTANT NOTICE.

I. & M. COHEN beg to notify that they have no connection directly or indirectly with a person or persons who have adopted a somewhat similar trade name. In order to avoid mistakes which are constantly occuring, customers are asked to carefully address all orders and communications intended for I. & M. COHEN as follows:—

I. & M. COHEN,

"The White House"

53/4 Houndsditch,

LONDON, E.1.

I. & M. COHEN take this opportunity of thanking customers for past favours, and will, as heretofore, use their best endeavours to give satisfaction, all orders receiving prompt and personal attention, and goods supplied at the lowest possible prices consistent with a reliable article.

# PROFITABLE SPECIALITIES

WHICH SELL ON THEIR MERITS.



The Original & Best Solid Eau de Cologne





# **FROZOCLONE**

is a convenient form of the finest quality Eau de Cologne, refreshing when rubbed on the forehead, equally pleasant as a smelling bottle, invaluable in a heated atmosphere and when motoring. A real acquisition to every household—excellent after shaving, and a boon to those in hospital.

REGISTERED.

# SOLID ENGLISH LAVENDER

Similar in size and packing to "FROZOCLONE." In blue glass bottles with silver caps.

PRICES AND TERMS AS "FROZOCLONE."

# R. DEMUTH'S LABORATORIES,

68 Salusbury Rd., & Montrose Avenue, LONDON, N.W. 6.



TRADE MARK Regd

SEE OTHER SIDE.



# The Ideal Fruity Laxative in Pastille Form.

Delicious, Reliable, Effective, Steady Profitable Seller.

2/3 minimum.

REDUCED PRICE FOR EXPORT. (UNSTAMPED).

21/- per doz.



# A Nail Polish with new and distinctive features.

Softens the Cuticle. Brilliant and Lasting Polish.

1/9 minimum Retail. Per doz. 15/-



# RISICCOL (Regd.) Demuth's Castor Oil Powder.

PREPARED FROM THE PUREST CASTOR OIL, ABSOLUTELY TASTELESS.

# FRU-MUTHOL (Paraffinum Liquidum B.P.)

A SOLID EMULSION.

In Raspberry, Orange and Lemon Flavours.

Put up in reputed 1 lb. Jars.



# R. DEMUTH'S LABORATORIES,

68 Salusbury Rd., & Montrose Avenue, LONDON, N.W. 6.

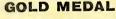
SEE OTHER SIDE.

SOLUBLE

TOILET PAPER

SANITARY





# MANILLA TOILET PAPER

(ROLLS AND CARTONS)

This is the premier Toilet Paper made, and combines all the important features' of sanitary papers with the addition of a special antiseptic of recognised Medical value. It is carefully prepared by a process that ensures purity and softness, and yet renders it sufficiently resistant to make it an ideal paper for Toilet use.



PLEASE WRITE US FOR SAMPLES.

Manufactured by the

# DRAYTON PAPER WORKS, Ltd.,

SOUTH PARK, FULHAM, LONDON, S.W. 6.

SOLUBLE

SANITARY





(ROLLS AND CARTONS)

This is the premier Toilet Paper made, and combines all the important features' of sanitary papers with the addition of a special antiseptic of recognised Medical value. It is carefully prepared by a process that ensures purity and softness, and yet renders it sufficiently resistant to make it an ideal paper for Toilet use.





PLEASE WRITE US FOR SAMPLES.

Manufactured by the

# DRAYTON PAPER WORKS, Ltd.,

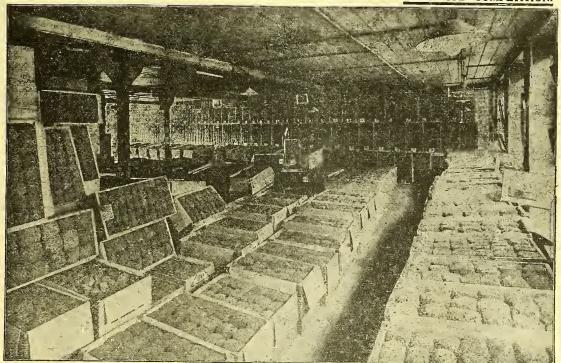
SOUTH PARK, FULHAM, LONDON, S.W. 6.

Telegraphic Address: "CRESSWELL, LONDON."

Telephone: No. 1432 Holborn.

## CRESSWEI

Sponge Importers, Exporters and Merchants, and Chamois Leather Dressers, 18 and 19 RED LION SQUARE LONDON, W.C.1 WITH THE LARGEST STOCKS OF ALL SPONGES IMPORTED DIRECT BY US FROM THE FISHERIES AT LOWEST PRICES. WE INVITE COMPETITION.



# Buyers are invited to Call to Inspect our Magnificent Stocks and make their own selections. Lowest Market Prices. Absolutely Best Values. The following abridged List will serve as a guide to Buyers when writing. BLEACHED MEDITERRANEAN SPONGES in Original Cases.

CONTENTS OF THE FOLLOWING CASES WILL BE PRESS-PACKED AND SENT POST FREE TO COLONIAL AND FOREIGN BUYERS WITHIN THE RADIUS OF PARCELS POST. HONEYCOMB.



### Extra Choice. Toilet & Bath. Finest Texture and Shape. Good 2nd Quality The Pick of all the Fisheries. Pieces Average Average ín Case. Price per Piece. Price per Piece. ín Case. 300 Toilet at 9d 6d. 9d. 250 200 1/-1/6 2/-2/6 180 170 160 140 ,, 1/-1/6 2/-2/6 160 140 120 120 110 90 80 75 70 65 60 100 ", 3/6 90 Medium Bath 4/6 3/-3/6 4/-4/6 5/-5/6 6/6 5/6 6/6 7/6 8/6 80 21 ,, 72 60 45 Large ,, 8/6 ,, 10/6

HONEYCOMB.

FINE TURKEY	
SOLIDS.	
SELECTED	
SHAPES,	
1st Quality	
Average Fieces Price	
in per Case, Piece,	
Nursery 200 at 1/-	
Toilet 150 ,, 1/6	
. 100 . 1/9	

100 ,, 2/-

Bath

80 ,, 2/6

50 ,, 3/-

36 ,, 4/-

24 , 5/~



LOOSE GOODS SPONGES IN SMALL PACKAGES. Fine Turkey. Fine Egyptian and Honeycomb. Bleached or unbleached (state which in ordering). On strings of I dozen pieces, or loose in bags. At per doz. : 2s., 3s., 4s., 6s., 9s., 12s., 15s., 18s., 24s., 30s., 36s., 42s., 48s., 54s., 60s., 66s., 72s. Bleached Cuban. At per String or Dozen. Wool, Grass, Yellow and Fine. 1s., 2s., 3s., 4s., 6s., 9s., 12s., 15s., 18s., 24s.

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IN GLASS. Also prepared from Chicken, Mutton or Veal.



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### BEEF TEA TABULES.



Each Tabule makes a Breakfast Cup of Nutritious Beef Tea. Put up in hermetically sealed tins for export.



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PREPARED SPECIALLY FOR INVALIDS.







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"INCIDIT in Scyllam qui vult vitare Charybdim" aptly illustrates the position of the physician in his endeavours to steer a case through an acute illness.

He has to avoid on the one hand the dangers attending a diet which however nourishing it may be in the ordinary way, is utterly unsuitable for the weakened assimilative powers of his patient, and on the other hand, the equal danger of not ordering a sufficiency of food to replace the wasted tissues and increase bodily resistance to the processes of disease.

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It is concentrated.

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It can be assimilated by the weakest digestive organs.

It is very agreeable and produces no dis-taste.

It has marked revivifying powers.

(For analysis see "British Medical Journal," June 9th, 1923, page 13 of advertisements).

A teaspoonful may be given every three hours or oftener, either alone or in milk, brandy or wine.

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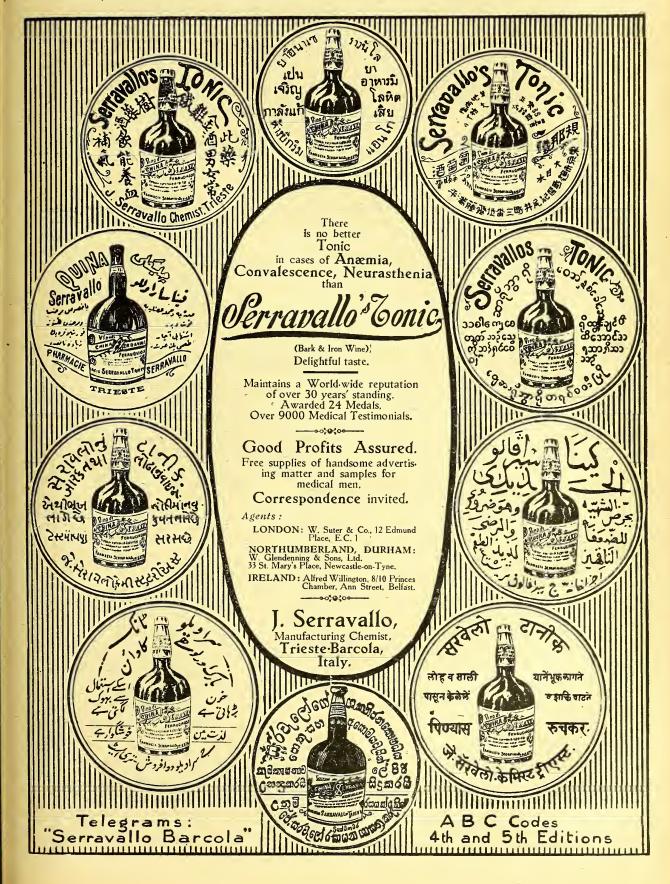
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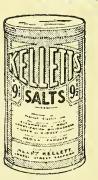
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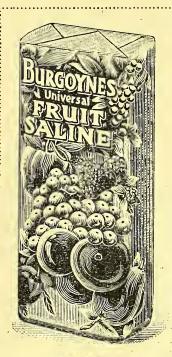
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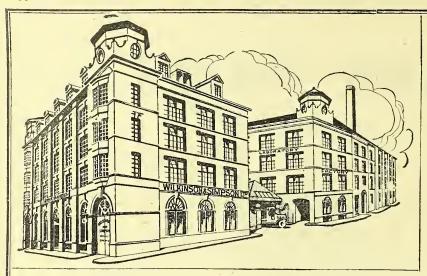
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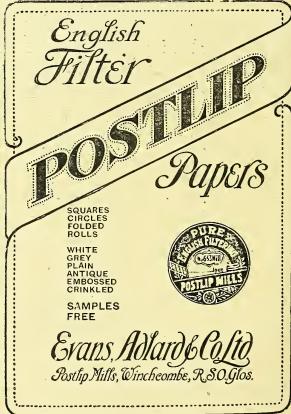
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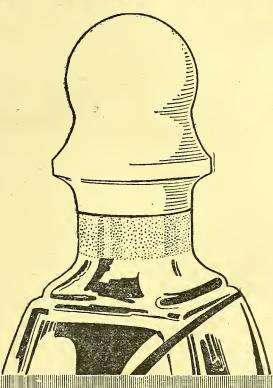
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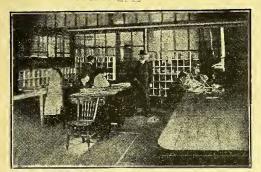
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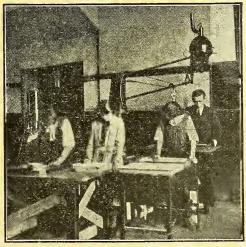
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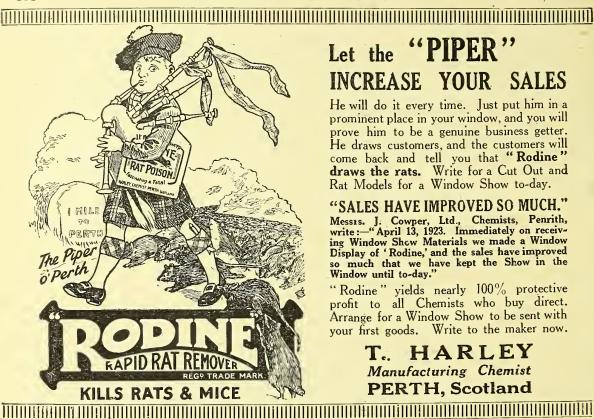
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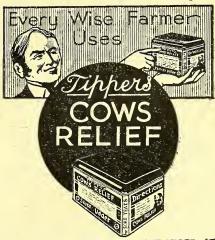
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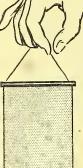
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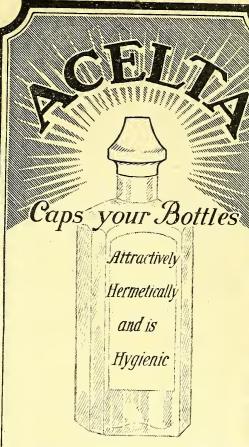


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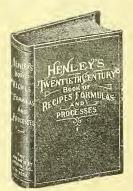
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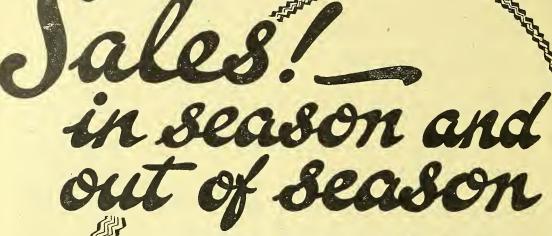
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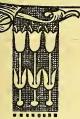
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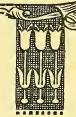


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### C. & D. Stock-taking Sheets

THOSE chemists whose financial year closes at the end of June, and who require to take stock, should note that the C. & D. Stock-taking Sheets halve the labour of taking stock. The items are arranged on ruled paper in the same order as in the C. & D. Retail Price List. which is afterwards employed for pricing out the articles, the amount of each column being then transferred to specially ruled pages at the end of the pad. Hints on stock-taking are given on the inside of the cover. The items in the Stock-taking Sheets cover all drugs, chemicals and galenicals found in chemists' shops, and, being in alphabetical order, are easily found for entering up. By means of the Stock-taking Sheets one person can take stock, but it is better for two assistants to work together, the more experienced calling out the quantity of the drug, etc., and the other entering it in the Stock-taking Sheets. The price of the complete pad of Stock-taking Sheets is 2s. 6d., post free, cash with order.

### Summary of this Issue

The more notable items only are dealt with

### Articles and Communications

The Progress of Pharmacy, a C. & D. feature which was begun a year ago, occupies pp. 900-911.

A Modern Chemical Works is the title of a descriptive article of a visit to the Graesser-Monsanto Works at Ruabon. (Pp. 965-968.)

The new building of the Port of London Authority is shown as it appears from the air, and the features of the building are described. (Pp. 959-960.)

"Our Town Traveller" describes visits to Addis's new brush works at Hertford, Zeal's clinical thermometer factory, and the Parfumerie Barranger. (Pp. 961-964.)

A review of the activities of the International Congress of Pharmacy begins on p. 970, and is illustrated with portraits of Dr. Theopilus Redwood and Mr. Thomas Greenish.

Sir Thomas Browne, the author of "Religio Medici," was a medical man, and an article deals with his methods of prescribing, with a facsimile of one of his letters of treatment. (Pp. 933-935.)

An illustrated article deals with the London botanical gardens. This is of particular interest to visitors to London for the International Congress and British Pharmaceutical Conference. (Pp. 919-932.)

The attractions of Oxford are described in such a manner that the article on pp. 942-958 will form a guide to members of the International Congress and British Pharmaceutical Conference, who are visiting that city on July 26.

### The Week's News

The proposed clause dealing with the marking of foreign honey is given on p. 918.

The continuation of the hearing of the formaldehyde case under the Safeguarding of Industries Act is printed on p. 974.

The further hearing of a prosecution of a London chemist under the Dangerous Drugs Act, who is alleged not to have taken reasonable care to see that a prescription for "dangerous" drugs dispensed at his pharmacy was genuine, is reported. Several Swansea chemists are charged with failing to mark prescriptions as required by the Regulations. (P. 899.)

### Trade and Market Matters

Among the price changes in the markets is an advance in morphine and salts, codeine and salts, Japanese agar agar, and Dutch farina. Aspirin, citric acid, menthol, hexamine and sulphonal are the turn easier. Turpentine, linseed and rape oils, maize starch powder, are lower. The end of the half-year finds business restricted all revend.

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### English and Welsh News

The Editor would be obliged if subscribers will send him marked copies of newspapers containing items of interest for insertion in this or other news sections.

### Tercentenary of the Oxford Botanic Garden

The Chancellor of the University of Oxford (the Marquis Curzon of Kedleston) presided, on June 23, at the tercentenary commemoration of the Botanic Garden, an illustrated account of which appears on p. 946 of this issue. The function was held in the garden itself, and was the occasion of eloquent speeches by the Chancellor, Sir David Prain (late of the Royal Botanic Gardens, Kew), Sir Herbert Warren (President of Magdalen College), Dr. Seward (Professor of Botany in the University of Cambridge), and Sir Frederick Keeble (Sherardian Professor of Botany in the University of Oxford). Sir Frederick remarked that the custodians of the garden had twice been within a hair's breadth of liberal benefactions, and twice something had happened to prevent them benefiting. He hoped the third time would be more positive, and not long in coming.

### Birmingham

At a meeting of the Birmingham Chamber of Commerce, on June 25, it was urged that the concessions allowed to house owners in regard to reassessments should also be applied to business and manufacturing premises.

A party of students from the Birmingham Municipal School of Pharmacy visited the Saltley works of Southall Bros. & Barclay, Ltd., on June 20, and spent an instructive afternoon in the various departments, including that for the manufacture of absorbent cotton-wool, gamgee tissue, and other surgical dressings. The chemical and pharmaceutical departments were also inspected, the students being afterwards entertained to tea.

#### -Hull

Hull Health Committee has sanctioned the proposal put forward by the Premier Oil Milling Co., to build a large soap works at Hull.

Mr. E. C. Williams, M.Sc., F.I.C., who has been appointed to the new Ramsay memorial chair of chemical engineering at University College, London, is the second son of Mr. T. R. Williams, O.B.E., a former headmaster of a Hull school. Professor Williams won an entrance scholarship to Christ's Hospital from the Hull Grammar School in 1904, and entered Manchester University with a Hulme Hall scholarship. After active service in France, he was appointed to the scientific staff of British Dyes, Ltd., Huddersfield.

### Leicester

The city council proposes to provide a number of "safe deposits," in which shopkeepers can leave their Saturday's takings until Monday.

Leicester Chamber of Trade is considering a plan to assist those members who desire to make appeals against the reassessment of their property.

Complaints are rife concerning the action of the police in moving on motorists who stop to do shopping. In the case of one firm of chemists it is stated that a loss of several pounds a week has been caused by this excess of zeal on the part of the authorities.

Local chemists well sustained their reputation for smart windows in the recent competition organised by A. & F. Pears, Ltd. (C. & D., June 23, p. 23), no fewer than one £5 and eight £1 prizes being obtained. Leicester appears to be the home of window-dressing.

At a recent meeting of Leicester Chamber of Commerce, the following resolution was adopted for submission to the Association of British Chambers of Commerce:—

That this representative meeting of interested members of the Leicester Chamber of Commerce views with alarm the new interpretation of Section 17 of the Pharmacy Act of 1863, whereby the trading facilities enjoyed by wholesale dealers for the past 55 years are threatened with extinction by the suggested Order in Council, under which the distribution of all poisons under the Act, technical, pharma-

ceutical and general, would be restricted to such an extent as to scriously embarrass the manufacturing processes of many important industries. This meeting emphatically protests against the new reading of Section 17 of the Act of 1868, and would point out the excellent way in which the requirements of the Section have been hitherto carried out, and suggest that the Dangerous Drugs Act, with which the Home Office is primarily concerned, should limit its activities to its original plan.

### Liverpool

Spurious half-crowns dated 1907 are in circulation.

That good qualified *locums* are scarce is the conclusion derived from inquiries by chemists who are anxious to get away during the summer.

Liverpool is fortunate in having a clerk to the Insurance Committee (Mr. Gill Hodgson) who is possessed of great tact and business ability, and is as popular with non-panel as with panel chemists.

A highly respected member of the drug-trade has been staying on holiday at "Heaven's Gates"; a letter sent him at that address, however, has been promptly returned by the G.P.O., marked "not known."

Mr. and Mrs. W. O. Williams (Newbery's) took the

Mr. and Mrs. W. O. Williams (Newbery's) took the opportunity of the exhibition week in London to renew their acquaintanceship with their old Liverpool friends.

The following members of the Liverpool Rexall Club were present at the Rexall Conference held at the Waldorf Hotel, London, on June 20 (C. & D., June 23, p. 861):—Mr. E. Norman Heath; Mr. Edwin Thompson; Mr. Harold Lomax; Mr. W. B. Woods (Ormskirk); Mr. Charley Dean (Bury); Mr. Holt (Rochdale); Mr. R. H. Hothersall (Oswaldtwistle); Mr. Hankinson (Grange-over-Sands); Mr. R. G. Edwards (Fallowfield); Mr. A. S. Galloway (Blackpool). Mr. Martin L. Daniels (general manager) also attended the meeting.

The Liverpool and District Pharmacists' Golfing Society held a competition on the West Cheshire golf course, on June 20, for the Pears' challenge cup. Twenty cards were taken out. The result (over eighteen holes on medal play) was a draw by Messrs. E. B. Brigham and W. A. Wynne, who returned net scores of 73. A replay has been arranged for July 4, over the Wootton golf links. The leading scores were:—

W. A. Wynne ... 87–14=73 A. F. Jewell ... 84–5=79 E. B. Brigham 88–15=73 A. Fairbairn ... 90–8=82 T. M. Lloyd ... 92–18=74 S. F. Alder ... 90–8=82 F. B. Derrick ... 93–18=75 J. G. Duncan ... 95–12=83 G. E. Hughes ... 95–20=75

### Portsmouth

A verdict of "Suicide" was returned at an inquest on the body of F. J. Triggs, tailor, St. George's Square, who died from drinking spirits of salt.

Our pharmaceutical Mayor, Alderman F. G. Foster, J.P., is having a busy time, and is helped by his daughter, Miss Doris Foster, who is acting as mayoress.

The United Ancient Order of Druids' meeting here has passed a resolution that the panel system is a failure, and called for reforms in medical treatment and the quality of medicines.

No doubt the visit of the British Medical Association next month will be the most important of the conferences to make headquarters at Portsmouth. Arrangements are well advanced for meetings and entertainment, as well as for holding a local exhibition.

The chemists' cricket team, while providing much pleasure and sociability, is not yet in the running for any trophy. Southampton chemists are the latest visitors to score at Portsmouth's expense. Mr. T. Brewis did his best for a losing side, and pharmaceutical circles are not alone in expressing admiration for this wonderful achievement.

Members of the Pharmaceutical Committee have received notice of their re-election and summons to the initial meeting on June 29. With about fifty chemists eligible it was hoped to introduce new blood and provide opportunity for the retirement of some with long service to their credit, but the old hands evidently must take the compliment and remain in harness.

### Sheffield

Mr. C. H. Hallatt is taking a holiday in Jersey.

Mr. H. Bown has recently had modern windows fitted at his pharmacy, which is one of the oldest in Sheffield.

Mr. H. H. Greenfield has been appointed local delegate to the group executive meetings of the Retail Pharmacists' Union, with Messrs. E. Preston and A. Knowles as deputies.

Several preparations included in the local formulary will require adjusting in order to keep within the limits of the Ministry of Health's circular on methylated preparations.

### Miscellaneous

FATAL COLLISION.—At Bournemouth, on June 21, a collision took place between a motor-car hired by Mr. H. J. Hughes, chemist and druggist, Wootton Bassett, and another vehicle, with the result that Daisy Atherton, a nurse in the employ of Mr. Hughes, was killed.

WHOLESALE DRUGGISTS' CRICKET CHAMPIONSHIP.—A match between elevens representing Allen & Hanburys, Ltd., and Burgoyne, Burbidges & Co., Ltd., played at Walthamstow, London, E., on June 23, resulted in a win for the former, the scores being 120 and 88 respectively. W. T. Stokes took four wickets for twelve runs for "Allenburys," and Scott scored twenty-four runs for their opponents.

IN THE COURTS.—In Bolton County Court, on June 21, William H. Hetherington, commercial traveller, sued J. B. Clough, Bolton, for the return of a deposit of £25 made in respect of an agency for selling pills. It was stated that the defendant, who did not appear, had returned £21: an order was made for the payment of the balance.—At Marlborough Street Police Court, London, on June 23, L. Ensel and H. W. Lanck, Dutch subjects, were each fined £462 for smuggling 22 lb. of seccharin, valued at £154.

LONDON CHEMISTS' GOLFING SOCIETY.—The fourth open meeting of the season was held at West Essex course on June 21. The first round was by medal play for the Burgoyne cup, and resulted as follows:—

G. Deeth		.~.		 81 - 7 = 74	
W. Ballantyne			***	87 - 12 = 75	
J. Skelley		•••	•••	92 - 14 = 78	
W. Main				85 - 2 = 83	
J. Deas	•••	•••	• • •	101 - 18 = 83	
W. Duncan		•••		99-16 = 83	
M. Carmichael				 92 - 8 = 84	

The second round was against bogey for the Hill cup, with the following result:-

H.	Bartlett	 	 	 1 up)
F.	Epps	 	 	 1 up   tie
W.	Ballantyne	 	 	 all square
W.	Main	 	 •9•	 1 down
W.	Attwood	 	 	 1 down
H.	Marshall	 	 	 2 down
W.	Gray .	 	 	 2 down
M.	Carmichael		 	2 down

Dangerous Drugs Act Charges.—At Marylebone Police Court, London, on June 22, Edgar Manning, musician, was charged on remand with being in unauthorised possession of certain "dangerous" drugs (C. & D., June 23, p. 861). Mr. E. Byles, Government chemist, gave evidence that the dark powder from the tube produced consisted of the residue after smoking opium; the brown substance in a jar consisted of the same dross; another substance was a mixture of boric acid and cocaine hydrochloride, 15.5 per cent. being cocaine; a white powder in a brown bottle contained cocaine; a white powder in a glass tube contained 79 per cent. of cocaine; another substance weighing 19 gr. contained 53 per cent. of cocaine; and another white powder contained cocaine hydrochloride. The accused was committed for trial after a further hearing on June 26.—At Tower Bridge Police Court, on June 26, Susan J. Busby, caretaker, was bound over on a charge of unlawfully procuring morphine from Mr. F. C. Duggleby, chemist and druggist, Waterloo Road, S.E.

### Irish News

The New Licensing Act

The clause in the Licensing Act prohibiting the sale of wines by chemists except on a doctor's prescription or order will not become operative until September 1. Chemists in many cases have large stocks in hand, and there is some talk of an effort to have this date deferred, but it is unlikely that it would be successful. The clause regarding the sale of methylated spirits is, however, now in operation. No clear ruling has, however, been given as to the procedure to be followed in the case of orders by telephone which affect suburban chemists, and this is a point which will have to be cleared up by the Home Office, as police who are notifying chemists, when asked for instructions, said they did not know. Some chemists take the view that the new clause is likely to encourage the drinking of methylated spirit, as if the purchasers state the object for which they want the spirit is, for example, cleaning or other purposes, the chemist has no option but to supply, provided the necessary signature is given.

#### Dublin

For damage to a shop premises at No. 1 Rathmines Terrace last April, by a mine explosion, Hamilton, Long & Co., Ltd., have claimed £133 compensation from the Dublin County Council, and £289 for similar damage to No. 5 Lower O'Connell Street, Dublin.

As a result of a dispute over the dismissal of some fellow-employees 500 members of the Irish Transport Workers' Union employed by Dublin wholesale drug houses ceased work on June 20. Pickets were posted outside the premises of, amongst others, McMaster, Hodgson & Co., Ltd., Boileau & Boyd, May, Roberts & Co., Ltd., and Shirley, Spence & Belford, Ltd. It is stated that three employees of McMaster, Hodgson & Co., were dismissed on the ground of slackness of business, and the men disputed this. Members of the Union to the number of 90 accordingly ceased work. The wholesale druggists then posted a resolution "That all members of the Union will be dismissed unless the workers employed by McMaster, Hodgson & Co., Ltd., return to work at once." The notice was disregarded, and the lock-out followed.

### Scottish News

### Edinburgh

"Your retrospect regarding 'Untrustworthy Customers' (C. & D., June 23, p. 894) reminds me of an experience I had a few years ago," writes a correspondent. "A theatrical type of gentleman handed mc a piece of paper on which was scribbled, 'Sulphate of quinine, 30 grains; phosphoric acid, diluted, one ounce. This costs 4d.' Realising that nerve like this did not require a tonic, I refused to supply him at the price."

I refused to supply him at the price."

A large number of the members of the Edinburgh Chemists' Golf Club turned out on June 20 to play against the bogey of Barnton golf course for the medal presented for annual competition by the late Mr. David Brown, F.R.S.E., F.C.S., F.I.C., and three prizes presented by the club. The result was as follows: (1) G. Graham Davidson, 1 up; (2) W. J. Rosie, all square; (3) G. W. Mangan, 2 down. The next competition will be held at Bruntsfield golf course for the Pinkerton Gibson trophy, the captain's prize and club prizes. A case of knives has been presented to the club by S. Maw, Son & Sons, Ltd., to be competed for at Longniddry on September 12, and a tortoiseshell-handled walking stick by Arthur Berton, Ltd., to be competed for at Duddingston on October 31.

### Fife

Mr. William W. Spence, chemist and druggist, Linlithgow, was recently installed as Baron Bailie of Blackness. The ceremony, which is an old-world and picturesque one, was enacted in the customary way on the Castle Hill in the presence of a large concourse of people.

A silver salver has been presented by David Waldie & Co., Ltd., manufacturing chemists, Calcutta, to Linlithgow Town Council, "to commemorate the centenary of the birth of Dr. David Waldie, a native of the royal burgh, discoverer of the anæsthetic properties of chloroform, and founder of the firm." The presentation, which took place at "Linlithgow Marches," June 19, was made by Mrs. Spence, wife of ex-Bailie Alexander Spence, chemist and druggist, Newington Road, Edinburgh (see also C. & D., 11., 1922, 3).

An interesting bowling match took place at Kirkcaldy on June 20, between Fifeshire and Lothian chemists, resulting in a win for the latter by nine shots. The scoring was as follows:—

Fifeshire

J. B. McLaren (Kirkcaldy) 10
J. Carmichael (Leslie) ... 33
H. Baxter (Inverkeithing) 1

Lothian
C. R. Brown (Edinburgh) 29
D. Mathewson (Blackhall) 12
Findlay Stuart (Broxburn) 24

Thanks are due to Messrs. R. D. Crawford and C. R. Brown for making all arrangements. So successful was the outing that it was decided to make the match an annual one.

The following photograph depicts the new premises of Mr. Peter Fenton, F.C.S., chemist and druggist, 33 Whytescauseway, Kirkcaldy, to which he recently



removed from 101 High Street, in the same town. Rexall goods, photographic apparatus and optical requisites are the chief features of the window-displays.

### Glasgow

Mr. A. Morris, chemist and druggist, has commenced in business at 241 Main Street, Bridgeton.

The following office-bearers were elected at a meeting of the rambling and tennis section of the Glasgow Pharmacy Club held at 165 Hill Street, Garnethill, on June 22, Mr. H. P. Arthur presiding: Convener, Miss Bain; Secretary, Mr. David Sime; Committee, Misses Aitchison, Arthur and Dalrymple, and Messrs. Dysart and Stark.

At Glasgow Sheriff Court, on June 25, a city doctor pleaded guilty to a charge of contravening the Dangerous Drugs Act by failing to enter in a register 21 oz. of drugs which he had purchased. It was stated that the register which the accused kept was in a note-book. For the defence, it was urged that the omission was inadvertent, and that there was no question of concealment. A fine of £50, with the alternative of thirty days' imprisonment, was imposed.

### New Companies

and Company News

P.C. means Private Company and R.O. Registered Office

Hardelot Plage Development Syndicate, Ltd. (P.C.).—Capital £21,000. Objects: To adopt an agreement with J. F. Horsman and the Hardelot Estates, Ltd., and to carry on the business, among others, of chemists. R.O.: 222 Strand. London. W.C.2.

222 Strand, London, W.C.2.

Grotticks Cash Chemists, Ltd. (P.C.).—Capital £100. Objects: To acquire the business of a drug-store formerly carried on by Mrs. E. Grottick as the "Laindon Drug Stores." The directors are Mrs. E. Grottick and J. A. Rambaut. R.O.: Avondale High Road, Laindon Hill, Essex.

Waterhouse & Gray, Ltd. (P.C.).—Capital £1,000. Objects: To carry on the business of manufacturing chemists, wholesale druggists, herbalists, drysalters, and oil and colour men, etc. The directors are E. Waterhouse, G. H. Gray, and C. E. Vessey. R.O.: 51 Stanley Street, Eheffield.

H. Reeves & Co., Ltd. (P.C.).—Capital £15,000. Objects: To carry on the business of wholesale and retail grocers, fruiterers and greengrocers, butchers, bakers and confectioners, tobacconists, chemists and druggists, etc. The directors are H. G. Reeves, B. Wood, and L. H. Alyward. R.O.: 15 Greetham Street, Southsea.

George O'Malley, Ltd. (P.C.).—Capital £1,000. Objects: To carry on in Mohill or elsewhere the business of wholesale and retail dispensing chemists, druggists, dealers in toilet requisites, agricultural machinery and requisites, fancy goods, oils, etc. G. O'Malley is the first managing director. R.O.: Main Street, Mohill, co. Leitrim.

Fox Instrument Co., Ltd. (P.C.).—Capital £8,000. Objects: To acquire the business now carried on at 55 Clayton Street and Elswick Court, Newcastle-on-Tyne, by I. T. Fox, as a scientific instrument maker, and to carry on the business of manufacturers of and dealers in pyrometers, thermometers, gauges, barometers, recorders and scientific appliances, etc. R.O.: 55 Clayton Street, Newcastle-on-Tyne.

CLAUD JACKSON, LTD. (P.C.).—Capital £500. Objects: To carry on the business of manufacturers of and dealers in all kinds of toilet, medicinal and other compounds, face powders, creams and preparations; skin and other emollients, etc.; also that of manufacturers of and dealers in all kinds of pots, jars, bottles, metal and other tubes, boxes and cases, whether wholly or partly of card, wood, metal, etc. R.O.: 22 Grange Street, New North Road, London, N.1.

J. C. & J. Field, I.td.—The profit for the year ended March 31, 1923, after providing for repairs and depreciation, was £27.646. Deducting income-tax and corporation tax, directors' and auditors' fees, legal charges, etc. there remains £14,337, plus £4,451 brought forward, making £18,788. A dividend of 12, per cent on Ordinary shares, less tax, is proposed, placing to reserve £1,772, (making £19,000), and carrying forward £4,497.

A. J. White, Ltd.—The twenty-sixth annual general meeting was held on June 21 at the Institute of Chartered Accountants, Moorgate Place, E.C., Mr. J. Taylor Marsh (the chairman) presiding. The chairman, proposing the adoption of the report and balance-sheet (C. & D., June 16, p. 834), said: It is gratifying to be able to report an increase in their profits. The reports from the States and Canada are very gratifying, and the company's able manager there, Mr. Mace, is very confident of continued growing success. The very low Continental exchange interferes with the company drawing such profit from trade done there as should be done in normal times. Both in France and Belgium satisfactory progress has been shown, but with French francs at 72 and Belgian francs at 84, profits, viewed from the standnoint of sterling, are comparatively small. Mr. R. Stafford Charles seconded the resolution, which was carried unanimously.

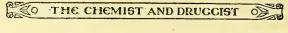
### Legal Reports

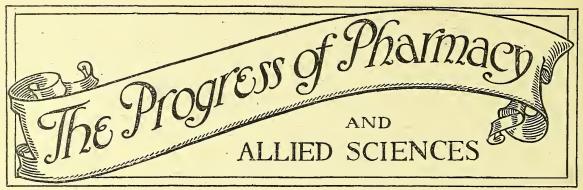
Dispensing Tested.—At Lambeth Police Court, London, on June 21, Mr. Walter Jones, chemist, 218 Ivydale Road, S.E., was summoned for supplying to the prejudice of the purchaser a prescription found on analysis to be deficient in ammonium carbonate to the extent of 47 per cent. Dr. H. W. Barnes, medical officer of health for Camberwell, told the Court that all ammonium compounds, if kept in stock solutions, were very volatile. The defendant agreed, and explained that he made up the prescription from a stock solution, which had been prepared some considerable time before; he overlooked the fact that it had been made up so long. He was not now using stock solutions. The cost of the deficiency was one-thirtieth of a penny. The other ingredient, which was twelve times as expensive, was present to the full extent. The magistrate thought the explanation a reasonable one, and dismissed the summons upon payment of £2 2s. costs.

Warranty as Defence.—Before the Leicestershire county magistrates, sitting at Leicester, on June 23, Mr. William Maurice Inglis, chemist and druggist, Oadby, was summoned for having sold, by his manager, Mr. Edward Aldridge Tomblin, chemist and druggist, weak tincture of iodine which contained not more than 0.016 gram of iodine per millilitre. The defendant, who pleaded "Not guilty," was represented by Mr. C. Bigg. Mr. Bigg said that the tincture was made strictly in accordance with the British Pharmacopœia. When this tincture was being mixed, however, the man engaged on the operation was called away; he left the tincture unfinished. Another employee assumed that it was ready and proceeded to bottle it. The first bottle, being taken from the top, was rather weak; that at the bottom was rather over strength. It was the first bottle that got into the hands of Mr. Inglis. Fortunately, however, Mr. Inglis had a written warranty from the wholesalers, who desired him to state that they accepted full responsibility. Such an incident had not occurred before to their knowledge, and they would take steps to see that it did not occur again. Meantime they were anxious that Mr. Inglis should be entirely exonerated. The warranty was handed in. Mr. William Maurice Inglis, giving evidence, said he had a business in King Richard's Road, Leicester, as well as at Oadby. He received an order from Mr. Tomblin for weak tincture of iodine, and obtained it from the wholesalers, with the warranty. Mr. Edward Aldridge Tomblin, chemist and druggist, deposed to receiving the tincture of iodine, which was in a corked bottle: he sold it exactly as received. The magistrates intimated that in face of the warranty they could not hold Mr. Inglis responsible. The Chief Constable: I entirely agree. I require the approval of the Bench in my suggestion that no proceedings should be taken against the wholesale firm in the circumstances providing they pay the costs. The Chairman: We will leave it at that. The costs are £1 4s.

Dangerous Drugs Act Cases.—At Marlborough Street Police Court, London, on June 21, Mr. Alfred John, trading as Rouse & Co., Wigmore Street, W.1. was summoned for having supplied "morphine sulphate and atropine sulphate" without being reasonably satisfied that a prescription was genuine. (The text of the summons was given in the C. & D., June 16, p. 832.) Mr. John was also summoned for unlawfully supplying drugs to Julian Pinder, an unauthorised person. Mr. Herbert Muskett prosecuted for the Commissioner of Police, and Mr. L. A. Byrne defended. Mr. Muskett explained that a police officer had inspected the register of "dangerous" drugs at Mr. John's shop; it could be seen that Pinder had been supplied with a large quantity of drugs over a long period of time. The prescription mentioned was a forgery from beginning to end; the initials of the doctor were incorrect, and the address given there, Buckingham Gate, was also incorrect. The address given by Pinder was incorrect too. Two tubes of morphine with atropine and three tubes of morphine was for three tubes; but it appeared that the two extra tubes

were supplied to make up the quantity mentioned in the prescription. He (Mr. Muskett) suggested that the defendant had done nothing to satisfy himself that the prescription was genuine. He did not suggest that the defendant had been more than negligent and careless. Detective-Sergeant Lewis gave formal evidence in corro-boration of the opening statement. The Magistrate: I don't think, considering the serious character of this legislation—and I include subordinate legislation—that any defendant can be made responsible unless he is shown to have done the act himself or have been a party to it. If he was in the shop and saw the prescription, and saw the man who came, and he was aiding and abetting a servant to sell the drug, then I think he would be responsible; but apart from that, I don't think he is responsible for the act of his servant. His Worship added that there must be a mens rea; and there was no guilt at all if there must be a mens rea. Mr. Muskett submitted that the provision was that to supply or sell dangerous drugs to a person who in fact was an unauthorised person was absolutely prohibited, and the question of guilty knowledge did not arise. He intimated that he would probably proceed by way of further summonses against the defendant or one or more of his servants. The hearing was adjourned.—At Swansea, on June 26, summonses were heard against several Swansea The hearing was adjourned.—At Swansea, on chemists and druggists for dispensing prescriptions for cocaine and failing to mark such prescriptions with the date on which they were dispensed. The defendants were Messrs. Harris & Morris, High Street; J. T. Davies (Chemists), Ltd., Walters Road; Mr. Augustus D. Matthews, chemist and druggist, Oxford Street; Messrs. John Rees and David Griffith Rees, trading as J. & D. Rees; Mr. Edward Rees, trading as J. & D. Rees; Mr. Edward Rees, trading as C. Thomas; and Boots Cash Chemists (Western), Ltd. The first-named defendants were summoned in respect of three different dates, and this case was taken first. Mr. Rupert Lewis appeared for the prosecution, and Mr. H. Glyn-Jones (instructed by Mr. C. H. Kirby, London) defended, except in the case against Messrs. J. T. Davies, Ltd., for whom Mr. Walter Samuel appeared. Mr. Rupert for whom Mr. Walter Samuel appeared. Mr. Rupert Lewis, opening in the cases against Messrs. Harris & Morris, who pleaded "Not guilty," explained that Section 5 of the Dangerous Drugs Act provided that prescriptions must be in writing, dated and signed by a medical practitioner, and must specify the name and address of the person for whom prescribed. An official form had also to be used, and the prescription had to bear the date of dispensing. He (Mr. Lewis) alleged that in this case the man to whom the prescriptions were supplied gave the name of a doctor in Liverpool, but defendants did not trouble to find out from the Medical Register whether there was such a medical man. for whom Mr. Walter Samuel appeared. Mr. Rupert Medical Register whether there was such a medical man. As a fact, there was no such doctor. Police evidence was given corroborating the opening statement. For the defence it was submitted that there was no official form issued in cases of emergency. It was further con-tended that there was no case to answer in respect to the signature of a medical man. The Bench, however, decided there was a case to answer. Mr. Morris (Harris & Morris) gave evidence, and Mr. Glyn-Jones raised the point of law on the wording of the section of the Act which laid down the Regulations and said: "If an official form is prescribed and issued by the Secretary official form is prescribed and issued by the Secretary of State in pursuance of the foregoing regulations," etc. Counsel submitted that no such form had been issued, and therefore the Regulations did not apply and the summonses must be dismissed. The Bench, after retirement, decided to convict. Mr. Glyn-Jones then asked that all the remaining cases in which he was interested should be adjourned sine die pending an appeal, subject to the Bench expressing their willingness to state a case. to the Bench expressing their willingness to state a case.
Mr. Walter Samuel, for J. T. Davies (Chemists), Ltd., said the facts in his case were the same, and he suggested that that case be also adjourned. The Bench agreed to state a case, and the chairman said the magistrates had unanimously come to the conclusion not to fix a penalty in regard to the case against Messrs. Harris & Morris, but to impose £4 4s. costs for the advocate and 30s. for the summons. The remaining cases were adjourned sine die.





### PHARMACY

A Liniment for Whooping-Cough.—The following is the formula for ol. crotonis.co., which Dr. W. J. Midelton claims possesses decided advantages over lin. crotonis, B.P., in cases of whooping-cough ("British Medical Journal," I. 1923, 746):—

Liq. epispasticus, B.P. ... 5vj. Ol. amygdalæ dulc. ... 5j.

M. Allow ether to evaporate, filter; then add:—
OI. crotonis ... ... mxL.

Soluble Quinine Salicylate.—Ninian M. Falkiner gives the following recipe for the preparation of a permanently clear mixture containing quinine salicylate ("British Medical Journal," I., 1923, 958):—

Tr. quininae ammon. (B.P.) ... m xx Sodii salicyl ... ... gr. x Glycerini ... ... 5 ss Aquam ... ad 3j

Probably a double salicylate of quinine and sodium is formed soluble in dilute ammonia. It was used largely during the war, principally in influenza.

Bonain's Solution.—The preparation of this antiseptic analgesic, largely used by French dental surgeons, occasionally presents certain difficulties. The following procedure is adopted by the General Pharmacy of the Hospitals of Bordeaux ("Bulletin des Travaux de la Société de Pharmacie de Bordeaux," 1923, p. 125): Equal parts of menthol and pure phenol in crystals are heated in a porcelain capsule on a water bath, stirring gently antil a cyrupy liquid is obtained; whereupon the prescribed amount of cocaine hydrochloride is added. This method yields a clear, almost colourless slightly syrupy liquid, equal parts of the three ingredients being used.

Thiosinamin Ampoules. — For the preparation of aqueous solutions of thiosinamin for hypodermic injection recourse is had either to antipyrin or sodium salicylate, the addition of which performs the function of a solvent. Guyot ("Bulletin des Travaux de la Société de Pharmacie de Bordeaux," 1923, p. 123) has found that the following formula:

| Thiosinamin ... ... 10 grams. | Antipyrin ... ... 10 grams. | Distilled water ... ... 200 c.c. |

yields a stable preparation, which does not deposit on keeping. The solution is prepared without the aid of heat, and the ampoules are best sterilised by Tyndallisation.

Silver Salvarsan.—W. H. Gray ("Journal of the Chemical Society" (Transactions), March, p. 634) discusors the theories regarding the behaviour of silver salvarsan and sodium silver salvarsan in solution. The latter has come into prominence in treatment of the highly resistant late stages of syphilis, as, although alkaline, it retains its solubility and is thus suitable for intravenous injection. The author concludes that the phenomena observed in the reactions of salvarsan (diaming-dihydroxyarsenobenzene) and its calts with silver nitrate (both in aqueous and alcoholic solution) must be ascribed to the properties of diamino-dihydroxy-

arsenobenzene and its salts as protective colloids. In the case of silver salvarsan, the silver chloride formed by double decomposition remains in solution. In sodium silver salvarsan silver is present as oxide, and probably to some extent as metal, being protected by colloidal sodium salvarsan or by its hydrolytic product, it salvarsan

The Influence of Modern Chemistry on Pharmacology is the title of an illuminating article by A. D. Hirschfelder, of the Department of Pharmacology, University of Minnesota, in "Industrial and Engineering Chemistry" (May 1923, 455). This contains many aphorisms, such as "a chemical substance becomes a drug when someone finds a use for it," and it rarely happens that a medicine exists ready made in the chemical laboratory." In dealing with general principles the first real gain in knowledge was that due to Stahlschmidt in 1859, who showed mere addition of methyl iodide to the strychnine molecule changed its action from convulsant to paralytisant. This curare-like action was found by Brown and Fraser in 1868 to be common to all quaternary ammonium bases. The second great advance was the discovery that the soporific properties of the sulphonal series are parallel to their distribution coefficients between liquids and water. Another tremendous advance was that made by Macht in 1918, when he demonstrated that papaverine owed its action to the benzyl portion of its molecule and began the discarding of the toxic properties of the remainder of the big molecule. Ehrlich, who in salvarsan developed a real specific remedy for syphilis, demonstrated twenty years ago that a number of dyes, especially the benzidine group, could be used against trypanosome diseases. During the Great War a new compound, "Bayer 205," was developed, which appears to be formed by a four-chained series of linked aminobenzoic-acid groups, united at each end to a "H acid," as follows:—

Payer 205 (probable formula)

This specific for African sleeping sickness has two interesting characteristics: (a) one-hundredth part of a dangerous dose will cure the patient; (b)-it acts by preventing the organism multiplying in the human body. Heiser during the last few years has achieved another triumph in curing leprosy by injection of esters of chaulmoogric acid (from chaulmoogra oil). The elusive problem of attacking the closely allied streptococci causing puerperal fever, rheumatism, pneumonia, has been begun. Ethylhydrocuprein was shown by Morgenroth in 1911 to be eight times as toxic as quinine to pneumonia under



cultural conditions, but it proved to be too poisonous for general internal use. The higher homologous (isoamyl and isooctyl) hydrocupreins were found to possess still greater killing properties, especially against streptococci, and were used in wartime by German surgeons as local antiseptic for abscesses. Since then Eschbaum has found that the drugs of the hydrocuprein series lower the surface tension of water in approximately the order of their antiseptic action. The acridine dye antiseptics would appear to be more active in presence of blood serum than in media free from proteins. Rivanol (2-ethoxy-6-9-diaminoacridine) is very efficient against local streptococcal infections in animals and man. In concentrations of one to two thousandths it does not irritate or injure the tissues, but kills the cocci and sterilises the wound. The conclusion drawn is that chemotherapy can only flourish by co-operation (industrial) between chemists and pharmacologists.

Stabilisation of Drugs.—Bourquelot was the first to draw attention, in 1896, to the action of enzymes, and particularly of oxydases, on the chemical constituents of vegetable drugs during the process of desiccation, and the influence they exert in modifying the original composition, and consequently the therapeutic action, of the active principles primarily present in the fresh plant. It has been established that vital manifestations persist in plants which have been gathered until complete desiccation has been effected, the plant drawing upon the reserves stored in various tissues. During these processes there is a loss of water, resulting in a rupture of the intercellular osmotic equilibrium, and now the various hydrolases, oxydases, peroxydases and diastases come into play, bringing about profound alterations in the complex structure of those principles actually present in the fresh plant. These processes explain the frequently observed difference in action between the fresh and the dried plant; therefore, in order to ensure the retention of the primitive action of a drug these enzymes must be eliminated. Of recent years the question of the stabilisation of drugs, the term applied to the methods advocated for inhibiting the activity of plant enzymes, has been exhaustively investigated by Continental workers, and several stabilised drugs, as well as galenical preparations made from these, are extensively used in practice. Three methods of stabilisation are at present in use: Perrot and Goris expose the fresh plants to the action of alcohol vapour for five minutes in an autoclave at a pressure of a quarter of an atmosphere, whereupon the plants are dried in a current of warm air. This method, which is patented, is used by manufacturers. Arnould and Goris employ a double autoclave; the plants, packed in small parcels wrapped in filter paper, are placed in the second compartment and treated for five minutes with alcohol vapour at a pressure of half an atmosphere. Bourquelot's original method, no longer used in pharmaceutical practice, consisted in immersing the plant in a boiling mixture of alcohol and glycerin. However, the fact must not be lost sight of that with certain plants the action of the enzymes is indispensable, since under its influence a therapeutically mert constituent is transformed into an active, valuable remedy, e.g., mustard, bearberry, laurel cherry, etc., and in these cases stabilisation is to be The whole question of stabilisation was recently discussed at a meeting of the Swiss pharmacopœia commission, one of the suggestions being to introduce a standard fluid extract prepared from the stabilised plant, particularly potent drugs, from which the various other galenical forms, such as tincture, syrup and ointment, would be prepared by direct dilution. H. Golaz ("Schweizerische Apotheker-Zeitung," No. 10 and 11, 1923), in referring to this proposal, discusses the different methods of stabilisation applicable to various groups of placts. Basing on his wide experience in the preparation of estabilized extracts, he draws attention to the arrows. of stabilised extracts, he draws attention to the very great difference in action often observed between the administration of the isolated active principle, and that produced by the galenical preparation; for instance, a

dose of 2 grams of emodin scarcely produces the same purgative effect as 4 grams of fluid extract of buckthorn, although the latter amount represents only about 0.1 gram of pure emodin, a proof of the indisputable value of galenical preparations. J. Lang ("Schweizerische Apotheker-Zeitung," No. 17, 1923), in referring to this proposal, points out that the introduction of stabilisation will alter the present methods of collecting plants, since it will entail submitting the fresh plant immediately to the requisite form of treatment, which raises several economic problems. Lang also draws attention to the revolution in pharmacognosy created by the introduction of stabilisation, since henceforth instead of studying the active principles present in dead plants, research will concentrate on the living plant; the various factors responsible for increasing the content of therapeutically active substance in the different phases of growth will, in future, prove considerations of prime importance. Both Golaz and Lang demand that in future soft extracts be deleted from the pharmacopæia.

### BACTERIOLOGY

Bactericidal Properties of Silver.—Surfaces of silver, when treated with potassium cyanide, lose their bactericidal action, silver cyanide ions being formed which are inactive ("Biochemische Zeitung," 1922, 131, 351-361). The authors conclude that colloidal silver has no bactericidal action. The poisonous action of silver is considered to be due to the influence of oxygen and carbon dioxide in the air on metallic silver.

Tellurium Derivatives as Bactericides. — Certain tellurium compounds of aliphatic diketones have been found to possess an extraordinarily high bactericidal power ("Biochemical Journal," Vol. XVII., No. 1, 30). The most active member is tellurium dipropionyl-methane, which in a dilution of 1 in 9,000,000 has the same bactericidal power as a solution of phenol of 1 in 500—e.g., nearly 2,000 times as great, with regard to B. coli. Experiments with other organisms (B. paratyphosus, streptococci, staphylococcus, etc.) have shown that the above tellurium compounds exert a selective action on the coliform organisms, the cocci being more resistant. No opinion as to the value of these discoveries to practical medicine can be expressed until the investigations are extended to other pathogenic organisms and until their toxicity to higher organisms is determined.

Selective Action of Dyes on Micro-Organisms.-It has been shown that certain dyes exert a more selective action than others on bacteria and protozoa ("Lancet," I., 1923, 314). Resistance to penetration of the dye is a factor which sometimes helps to explain poor antiseptic action, but the dye may also cause chemical reaction, which may lead to the destruction or alteration of the chemical com-ponents of the living cell. In the experiments made with a view to detecting dyes having protozoal action, a dye (auramine) has been discovered which will kill trypanosomes within 15 minutes in a dilution of 1/20,000. comparison of this dye with the results quoted by Wenyon in the case of Bayer 205 is proceeding. The action of the dye on the minute worms or filariæ present in a man suf-fering from paramœcia was examined, and auramine again killed the filarize in five minutes in a dilution of 1 in 41,000 and in 20 minutes in a dilution of 1 in 8,000 when mixed with the patient's blood. Thus the oxazine group of dyes shows selective action between bacteria and protozoa and to a lesser extent amongst bacteria themselves, killing off paramoecia in high dilution, Gram-positive organisms in lower dilution, and, in dilutions used, not killing off Gram-negative bacteria at all.

Defatted Bacterial Vaccines.—Preventive inoculation against tuberculosis has been almost or quite a failure; curative inoculation has not been any great success ("Lancet," I., 1923, 1,221). It is in connection with this infection that new work of Prof. G. Dreyer will be studied with most interest. On the whole, he points out, anti-bacterial, as distinct from antitoxic, immunity

can be achieved experimentally better with Gramnegative than with Gram-positive organisms, which suggests that the lipoidal substances, on which he believes Gram-staining to depend, are responsible for the failure of Gram-positive and acid-fast bacilli to arouse an effective response in the body. He shows that if the tubercle bacillus be first treated with formalin and then extracted with acetone, a thin wraith of the body of the bacillus remains which is not acid-fast, is more or less easily digested with trypsin, and will cause the production of various anti-bodies when inoculated into animals. It will be remembered that Deycke and Much have claimed results from so-called partial antigens prepared on different lines. Prof. Dreyer further shows that repeated small doses of his preparation bring about a definite improvement, both general and local, in animals infected with tuberculosis. The preliminary observations of Dr. A. C. Inman at Brompton and Drs. P. Fildes and G. T. Western at the London Hospital on the treatment of human cases are encouraging and show that Prof. Dreyer's antigen is at any rate not injurious. Similar defatted preparations have also been made with staphylococci, streptococci, and other organisms, and are under examination with promising results, the absence of any painful local reaction being especially noteworthy.

#### BOTANY

"Glucokinin" is the name suggested for a new plant hormone of insulin-like nature by J. B. Collip ("Nature," April 28 p. 571), which he predicted would be found wherever glycogen occurs. Positive results were obtained with clam tissue and later with yeast Extracts made from onion tops, onion roots, barley roots and sprouted grain, green wheat leaves, bean tops, and lettuce have also been found to produce marked hyperglycæmia in normal rabbits.

"Linkage" in Sweet Pea.—Professor R. C. Punnett ("Journal of Genetics," Vol. 13, No. 1), in reviewing the numerous pairs of (linkage) characters of the sweet pea (Lat'yrus odoratus), considers that the relation between the number of linkage groups and the Laploid number (7) of chromosomes will eventually be found to correspond. Provisional "chromosome" maps are given of five of the linkage groups based on the percentage crossing over from such pairs of Mendelian characters as purple-red corolla, long round pollen, and erect hooded standard.

with presence of light and some lipochrome (generally carotene), according to K. H. Coward ("Biochemical Journal," 1923, 17, p. 134). The synthesis of this vitamin is independent of the presence of chlorophyll and can be carried out in the absence of oxygen or carben dioxide. Almost complete absence of calcium salts in the nutrient solution of a water culture of Tradescantia did not prevent synthesis of vitamin A in the plant's leaves. Chloroform in the atmosphere inhibits the formation of the vitamin.

Longevity in a Fern.—F. J. Allen, writing to "Nature," June 2, 1923. records long-continued life of a curious sort of the Hart's Tongue fern known as Scolopendrium vulgare var peraferum cornutium. In this the midrib and lamina part company at the apex of the frond, the midrib projecting as a horn, and the lamina forming a frilled pocket on the anterior surface. The specimen, which was mature when gathered in 1872, has twice divided dichotomously, forming three crowns (one now dead). The living ones, transplanted in 1917, are as vigorous and as young in appearance as the original plant fifty years ago.

Fat Formation in the Living Cell. — The mould Endomyces vernalis has been found by Hugo Haelin and Walter Kinttof ("Berichte," 1923, 56 B., p. 439) to grow in pure solutions of acetaldehyde, pyruvic acid, or aldol, which have been adjusted with potassium hydrogen phosphate to hydrogen in concentration Ph 6.8,

fat appearing within twenty-four hours. The process of fat formation is considered to be due to conversion of sugar by zymase through pyruvic acid into acetaldehyde, thence to aldol and glyceryl ester. The formation of acetaldehyde as an intermediate product was demonstrated. The synthesis of fats from acetaldehyde is considered to be due to synthesising enzymes of the carboligase type.

Evolutionary Chemical Characters in Trees.—Mr. H. G. Smith, of Sydney, in his presidential address to the Australasian Association for the Advancement of Science at Wellington, N.Z., in January, made some interesting generalisations from the well-known phyto-chemical investigations of Smith and Baker on the Eucalypts. The genus Eucalyptus apparently originated in the western and north-western portions of Australia, but experienced varying degrees of soil and climate as it spread eastward which were met by responding characteristics. The two main factors controlling chemical sequence throughout the genus may be stated: (1) The same species of Eucalyptus has chemical properties of a comparatively constant nature wherever found growing under natural conditions, and (2) each constituent follows the sequence of species in increasing amount until a maximum is reached in one or more of them. This applies equally to exudations (kinos) as well as oils. Two crystalline substances (aromadendrin and eudesmin) found in the older species becomes extinct in the "iron-barks," and are therefore absent in all the more recent species ("stringybarks," "peppermints," "ashes," etc.), though eudesmin occurs to the extent of 10 per cent. in some kinos. It is suggested that the small amount of mineral matter secreted in timber of very large trees such as E. regnans, E. pilularis, etc., is the reason for their continued growth and great size. In this connection the presence of manganese cannot be considered as accidental, but a necessary condition for successful growth of these trees. The whole question evidently hinges around the action exerted by enzymes in the structural formation of forest trees and their chemical constituents.

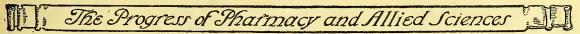
### ANALYTICAL CHEMISTRY

Arsenic Confusion with Tellurium.—Isnard ("Journal de Pharmacie et de Chimie," 1923, 27, 216) states that samples of bismuth nitrate have been found showing the presence of arsenic when tested with Bougault's reagent. Marsh's test, however, gave negative results. On further investigation it was found that the reaction obtained with Bougault's reagent was due to tellurium.

Trichloracetic Acid as Protein Precipitant.—For estimating small quantities of non-protein nitrogen the best precipitant has been found in trichloracetic acid ("Journal de Pharmacie et de Chimie," 1922, 26, 300). Good results were obtained with only 2 c.c. of filtrate, while when tungstic acid was employed 5 c.c. of filtrate was necessary. There is no loss in boiling, and hydrolysis is more rapid, enabling a more accurate estimation.

Drainage Factors for Burettes.—At a meeting of the Society of Glass Technology on May 16, Mr. V. Stott, in his "Notes on Burettes," stated that a burette emptied rapidly had a very high drainage factor, the draining continuing over a long period. A 50 c.c. burette emptying in 20 seconds had not finished draining in 30 minutes. A burette with a long emptying time possesses only a small drainage, which is practically complete in a comparatively short period, thus giving accurate readings. Errors due to drainage factor are too large to be negligible (as shown in specified instances).

Detection of Urobilin in Urine.—The following method has been suggested ("Journal de Pharmacie et de Chimie," 1922, 26, 379). Take equal parts of urine and a solution of the composition:—Zinc oxide 15 gm., 95 per cent. alcohol 250 c.c., glacial acetic acid 15 c.c. Shake for 48 hours and filter. Then add one drop of 10 per cent. solution iodine tincture and one-tenth of the total



volume of chloroform. After this has been well shaken the chloroform layer is allowed to separate. The presence of urobilin is indicated by an emerald-green fluorescence in the chloroform layer. If there is excess of urobilin the chloroform layer will become rose-coloured.

Nitrate Test.—The ring test for nitrate possesses two main disadvantages: the ferrous-sulphate solution does not keep well, whilst if made up freshly each time the salt dissolves only slowly in cold water. I. G. Nixon ("Chemical News," April 27, 1923) has studied various nitro-sulphonic acids of the naphthalene series in a search for a sensitive test for nitrates, and has found that 2:6:8 naphthol disulphonic acid ("G Salt") gives a distinct red colour in the presence of 0.02 milligrams of nitrogen (as nitric acid). The test is applied as follows:—About 1 c.c. of the solution to be tested is follows:—About 1 c.c. of the solution to be tested is mixed with approximately an equal volume of concentrated sulphuric acid, and then about 5 c.c. of a 1 per cent solution of "G Salt" slowly added; if a nitrate or nitrite is present an intense wine red colour is developed. The test may also be applied as a ring test; in this case the nitrate solution is mixed with that of in this case the nitrate solution is mixed with that of the "G Salt" and concentrated sulphuric acid then run down the side of the test tube. A red ring is formed at the junction of the two liquids, and on shaking the tube, this colour is communicated to the whole of its contents.

#### BIOLOGICAL CHEMISTRY

Zinc in Cancerous Tissues .- The amount of zinc present in the liver, spleen and blood in cases of leucæmia and in a large number of tumour tissues has been found to vary with the activity of the tumour ("Bulletin de la Société de Chimie Biologique," 1923, 5, 23).

Tartaric Acid in Green Plants.—H. Frantzen and F. Helwert ("Biochemische Zeitung" 1923, 136, 291) state that tartaric acid occurs only in five plants, Vitis vinifera (berries), Tamarindus indica (fruit), Beta vulgaris (unripe beet), Acer saccharinum (juice), and Pyrus aucuparia (berries). It may be present in Quercus

Production of Anti-Enzymes.—Polypeptidase, lipase and saccharase have been injected intravenously in rabbits to ascertain if it is possible to produce in the blood-serum a substance with anti-enzymic properties ("Ferment-fortschrift." 1922, 6, 286). The results obtained were negative. It has been found that even highly active saccharase preparations do not undergo dialysis.

Loss of Morphine on Storage of Dry Opium Powder may be due, according to H. E. Annett ("Biochemical Journal," 1922, 16, p. 763), to the oxidising action of enzymes. The latex of Indian opium poppy has a strong oxidising action on gualacum tineture and pyrogallol, and is particularly powerful in oxidising benzidine and tyrosine. Opium powder stored three years still contains an enzyme oxidising benzidine. Hydrogen peroxide inhibits the oxidising action of the latex.

Loss of Preservative in Vaccines.—Bacterial vaccines and most biological products are usually preserved with 0.5 per cent. phenol or 0.3 per cent. tri-cresol. P. Masucci and Margaret I. Moffat, in the "Journal of the American Pharmaceutical Association" (February 1923, p. 117), investigated the loss of preservative from vials with puncturable rubber caps. In eighteen months they find that a loss occurs of 50 to 70 per cent. in tri-cresol content and of 20 to 40 per cent. of phenol. The loss can only be explained by diffusion of tri-cresol or phenol vapours through the rubber cap.

Influence of Insulin on Blood-Sugar.—It is generally assumed that the normal blood-sugar exists as  $\alpha$ - $\beta$ -glucose, but as the result of investigations ("Journal of Physiology," 1923, 57, 224-233), it is believed the blood-sugar in the normal individuals exists largely as  $\gamma$ -glucose. In the case of diabetics, however, the  $\gamma$ -glucose is absent and its place is taken by  $\alpha$ - $\beta$ -glucose and disaccharides. It is suggested that the  $\alpha$ - $\beta$ -glucose cannot be directly stored or utilised, but an enzyme is responsible for the conversion of  $\alpha$ - $\beta$ -glucose into  $\gamma$ -glucose; the absence of this enzyme is suggested as the direct cause of diabetes mellitus. The action of insulin seems to be due to its power of changing  $\alpha$ - $\beta$ -glucose into  $\gamma$ -glucose.

Blackening of Leaves on Drying.-M. Bridel was able to demonstrate that the black colour the leaves of a number of Scrophulariaceæ assume during drying was due to the decomposition of a glucoside present in the plants, and which he found to be identical with aucubin, the glucoside contained in Aucuba japonica, Lin. He decided to investigate the cause of the blackening of the decided to investigate the cause of the blackening of the leaves of Monotropa Hypopitys, Lin., which is all the more remarkable since these do not contain chlorophyll. Adopting the biochemical method ("Comptes Rendus," June 11, 1923) Bridel succeeded in isolating a glucoside, to which he suggests the name of monetropein, obtaining 2 grams from 5,200 grams of leaves. It occurs in colourless, odourless, prisms, with a bitter taste; it is lævo-

Standardisation of Pituitary Extract.—That powerful oxytocic, pituitary extract—a solution containing the water soluble principle or principles from the fresh posterior lobe of the pituitary body of cattle—is official in the United States Pharmacopæia as Solution of Hypophysis (Liquor Hypophysis). It is required to be standardised so that 1 c.c. diluted 20,000 times has the same activity on the isolated uterus of the virgin guinea-pig as a oneto-twenty-million solution of betaiminazolyl-ethylamine (histamine) hydrochloride. In practice the pharmacopœial standard has been found unreliable and American manufacturers have adopted various modifications of the method in an attempt to overcome the objections to this assay method. Smith and McClosky ("Public Health Reports," March 16, 1923) describe a method for the preparation of an infundibular powder of uniform potency, representing the whole oxytocic and pressor activity of the infundibular lobe of the pituitary gland. The powder has not shown any deterioration after nearly eight months. The active principle (or principles) is readily extracted quantitatively from the powder by simple manipulation. It is proposed that an infundibular powder such as 1s described be used as a standard for the assay of commercial extracts by the isolated uterus method, and the recommendation is made that manufacturers be required to make and standardise their extracts to represent the activity of 4 milligrams of the standard powder, or its approximate equal of fresh gland substance (which is 30 milligrams) per cubic centimetre of extract.

### PURE CHEMISTRY

Variation of Ion Concentration in Sea-water.—Legendre states (Comptes Rendues, 1922, 175, 773-776) that the PH of sea-water varies during the day, and he gives data of methods and results. The concentration of PH is said to be related to the oxygen content of the water, and to be related to the oxygen content of the water, and it is explained by the phenomenon of photo-synthesis of the algæ; by using carbon dioxide in daylight they diminish the concentration of hydrogen ions.

Arbutin.—The constitution of this glucoside is given by A. K. Macbeth and J. Mackay ("Journal of the Chemical Society" (Transactions), March, p. 717), as consisting of schedules of glucosic explicit surjections of the constitution of the c

sisting of a molecule of d-glucose combined with quinol, the internal linking of the sugar being the butvlene-oxide type, viz. :

 $\mathrm{OH} \cdot \mathrm{CH}_2 \cdot \mathrm{CH}(\mathrm{OH}) \cdot \mathrm{CH} \cdot \mathrm{CH}(\mathrm{OH}) \cdot \mathrm{CH}(\mathrm{OH}) \cdot \mathrm{CH} \cdot \mathrm{O} \cdot \mathrm{C}_6 \mathrm{H}_4 \cdot \mathrm{OH}.$ -0-

The Electron in Chemistry is the title chosen by Sir J. J. Thomson for a series of lectures given before the Franklin Institute, Philadelphia, U.S.A., on April 9-13. The choice of chemistry as the subject for the lectures was because "the idea of the electron will break down, and indeed has already done so to some extent, the barrier of ignorance which has divided the study of the property of matter into two distinct sciences, physics

and chemistry." The electron discovered in 1897 has proved to be a constituent of all atoms and invariable in its charge of negative electricity which is numerically equal to the positive charge associated with an atom of hydrogen in the electrolysis of solutions. The electrons in atoms of different chemical elements were found to be equal to their atomic number (or the number of element arranged in order of atomic weights). The element arranged in order of atomic weights). electrons only account for  $\frac{1}{3400}$  of the mass of the atom, and as the normal atom is electrically neutral, the positive charge is associated with a mass equal to that of the atom. The structure of the electrons is responsible for the chemical properties of the atom, the structure of the positive core being concerned in any radioactive transformations only. The carrier of the positive charge (unlike the negative electron) varies from element to element. The atom is made up of a massive positively electrified centre surrounded by electrons. The number of electrons increases from one in the atom of hydrogen to a hundred or more in the heavier elements. By assuming that the law of force betwen the positive part and the surrounding electrons is not that of the usual "inverse square," but a more complex one which changes from attraction to repulsion as the distances diminish, Sir Joseph is able to build up a "simple mental picture of the structure of the atom and its consequences in close agreement with the facts of chemistry.' Consideration is mainly given to the Lewis-Langmuir type of atom with electrons arranged in "shells" around a positive charge without necessarily describing orbits. Valency is a property depending upon the number of electrons in the outer layer. Dispositions are calculated for neutral atoms with one to eight electrons, which can be arranged symmetrically at the same distance from the centre and at the corners of a regular polyhedron. Stable equilibrium for nine electrons in a single shell would require a post-tive charge greater than 9e (e being the charge on one electron), but a new arrangement of eight electrons at the same distance from the centre of the atom and a single electron a long way out (6½ times that of inner electrons) could be held by charge of 9e. This second system would be estable until 16 all the stable until 16 all system would be stable until 16 electron atom. But with the seventeenth electron a third shell would be started. When positive charge is increased the number of electrons it can hold in stable equilibrium with its centre at the atom increases also; thus a large positive charge could hold more than eight electrons in the inner layer, so that if an additional electron is trapped in an inner layer two consecutive elements with different atomic weights could have the same valency, as the latter depends only on the number of electrons in the outer layers. Groups of elements (iron, nickel, and cobalt, and the rare earths) fulfil such a condition. Electrons can often be arranged in stable equilibrium in more than one way, and in some cases with little energy differences (which accounts for allotropic forms and various (which accounts for allotropic forms and various). Nitrogen has five disposable electrons, and if one of these is detached, remaining four will naturally arrange themselves to the tetrahedron round the centre. On this nucleus capturing an additional electron the latter is likely to take up a position outside the tetrahedron (the stability of which is only two per cent. less than normal), and give rise to activated nitrogen. This, like the alkali metals, vigorously attacks halogens and is readily ionised. Positively charged atoms have lost one or more electrons from the outer layer. Hydrogen has only one electron to lose, and it is the only one that has not been observed with more than one positive charge. Carbon, nitrogen, and oxygen have been found with double charges, and even with three and four electrons missings. Seven positive charges have been observed on mercury. Some atoms readily acquire a negative charge but others never do. Neon, which has eight electrons (the maximum number of electrons) in the outer layer cannot accommodate, and so cannot receive, a negative charge. Negative charges are common on hydrogen, chlorine, carbon, and oxygen, but no atom has been observed carrying two negative

charges. Oxygen with one positive charge will have five electrons in its outer shell, and should have the same valency as nitrogen and form the compound  $OH_a$  with molecular weight 1g. With positive ray analysis a line corresponding to this weight is frequently observed. Oxygen with a double charge will have same valency as neutral carbon and form the compound  $OH_a$ , of which spectrum lines have been found.

### PHARMACEUTICAL CHEMISTRY

Correct Viscosity for Paraffin.—Recent investigations ("Lancet," I., 1923, 594) have shown that a paraffin of viscosity 230 gives more satisfactory results than one with a viscosity of 130, and it is preferable always to use a paraffin of high viscosity. The mean of the viscosities of the two paraffins used in the trials was 180, and a viscosity standard of certainly not less than 180 should be adopted. The viscosity figure is the time in seconds taken by 50 c.c. of oil maintained at 100° F. to flow out from a Redwood viscometer.

A New Reagent for Alkaloids.—R. Weinland and J. Heinsler (Süddeutsche Apotheker Zeitung, 1922, 61 46; Chem. Abstr., 1922, 16, 3730) have discovered a new reagent for alkaloids. They prepare pyrocatechol arsenic acid O: As (O.C.H.OH), crystals by mixing 44 gm. of pyrocatechol with 27 gm. of arsenic acid in 70 c.c. of boiling water and filtering. The filtrate after some days in concentrated solution with water forms slightly soluble salts with bases and alkaloids. Unfortunately it also precipitates albumin and peptone. If a solution of an alkaloid in the amounts given below is added it becomes turbid. Amount of alkaloid in 5c.c. of water:—Quinine sulphate 0.03 mgm.; hydrastine hydrochloride 0.05 mgm.; coninc hydrochloride, physostigmine sulphate, colchicine hydrochloride and apomorphine hydrochloride 0.5 mgm.

Estimation of Chloral Hydrate is a recurring subject dealt with by I. M. Kolthoff ("Pharmaceutisch Weekblad," 1923, 60, p. 2). He states that the high results obtained in the ordinary method (conversion by excess of sodium hydroxide into chloroform and sodium formate) is due to absorption of carbon dioxide from the air and not to decomposition of chloroform by excess of alkali. Decinormal sodium hydroxide may be allowed to remain for twenty minutes at 40° C. in contact with the reaction mixture without decomposition of chloroform. The method advocated is to allow 30 c.c. of decinormal sodium hydroxide solution to react with 25 c.c. of one-tenth molar solution of chloral hydrate in a closed flask for fifteen minutes. Excess of alkali is then titrated to phenolphthalein. The decinormal sodium hydrate solution is standardised by means of a blank test under same conditions.

The Properties of Colloidal Solutions.—The report of Professor A. J. Clark, published in the "British Medical Journal," on his investigations on colloidal solutions (C. & D., March 31, p. 437) has given rise to considerable controversy. Sir Wm. Pope, F.R.S., points out ("British Medical Journal," I., 1923, 731) "that many if not most of the experimental results recorded are erroneous and misleading, and that in consequence the conclusions drawn are unjustified." One is taken as an example. The solution known as "colloidal ferrum Crookes" contains 0.05 per cent. of iron as a colloidal ferric compound, with about 0.5 per cent. of gelatin and about 3.5 per cent. of glucose, as may be ascertained by any competent analyst; it passes through filter paper without leaving a precipitate, and is faintly alkaline in reaction owing to the presence of a small proportion of sodium hydroxide. Presumably (says Sir William Pope) everyone is aware that ferric salts are precipitated by sodium hydroxide unless retained in colloidal solution by some protective substance. The simple and direct proof that such solutions contain the iron in the form of colloidally suspended particles which can be seen in the ultramicroscope has never before been impugned. But Professor Clark disregards the effect of the gelatin and the glucose, and does not note the

alkalinity of the solution, the factors which directly prove the colloidal condition of the iron in the preparation. Professor Clark, commenting on this, states that Sir William Pope produces no evidence to show that a single experimental fact stated . . is incorrect. Professor Clark goes on to point out that in eight separate bottles of collosol ferrum Crookes the solution was acid. Collosol ferrum, he states, gives all the reactions characteristic of a dilute solution of a collection of the collection of a dilute solution of a ferrous salt which are totally different from those given either "by an ordinary solution of a ferric salt or by a solution of colloidal iron. As regards precipitate, five out of six specimens left a heavy precipitate when filtered through a filter paper. One of the two bottles examined yielded 0.08 per cent. of prethe two bottles examined yielded 0.08 per cent. of precipitate on filtration; the other bottle obtained fresh from Messrs. Crookes gave no precipitate. The iron in collosol ferrum, when tested by dialysis, ultrafiltration, or diffusion, behaved exactly as if in true solution. "Sir William Pope argues that the iron in colloidal ferrum" must be colloidal because it is in the ferric state and the solution is alkaline. The iron, however, is in the ferrous solution is alkaline. The iron, however, is in the ferrous state and the solution is acid. So far as I understand Sir William Pope, the only other evidence he adduces is that the solution shows colloidal particles on ultramicroscopic examination and contains gelatin and sugar. If my interpretation of Sir William Pope's statement be correct, I will leave it to chemists with experience of colloidal chemistry to say what they think of the argument that iron in a solution must be colloidal if the solution contains particles visible under the ultramicroscope, and also contains gelatin and sugar. Sir William Pope, however, really bases his argument on the alkaline reaction of ever, really bases his argument on the alkaline reaction of the fluid. I say it is acid." W. M. Bayliss, another investigator, wrote (p. 784) stating that the solution was strongly acid. A deep blue colour was obtained with potassium ferricyanide, a faint blue with ferrocyanide. The writer points out that the collosol ferrum sold to him "was similar in its properties to those tested by Professor Clark." H. H. Dale writes in sympathetic reference to the statement of Sir William Pope against "the challenge of presumptuous experiment." In a further com-"has been led by a too superficial study to cast unfounded aspersions upon the characters of a number of thoroughly reputable colloids." Professor Clark points out that reputable colloids." Professor Clark points out that with regard to collosol iodine he found that this substance contained one-quarter of the advertised amount of iodine. An independent analysis performed by Mr. Tickle, county analyst for Devonshire, gave results which agreed exactly with Professor Clark's analysis. While this work was with Professor Clark's analysis. While this proceeding (says Professor Clark) Messrs. Crookes apparently revised their ideas concerning the iodine content of collosol iodine, for while the label on the bottle still stated that it was an 0.2 per cent. solution, they stated in their literature that it contained 0.05 per cent. colloidal iodine. Nearly three months after Sir William Pope discovers that now this preparation contains 0.2 per cent. of iodine. "I do not suggest that Sir William Pope's recent analysis is incorporat but obviously it does Pope's recent analysis is incorrect, but obviously it does not prove that the previous results were incorrect." There has been no further correspondence.

### INDUSTRIAL CHEMISTRY

Turpentine and Punctate Basophilia.—Inhalation of turpentine vapour can cause basophilia indistinguishable from that produced by lead ("British Medical Journal," 1923, I., 170). Turpentine and white spirit (and paints) have been found to have slight toxic effects on vegetable protoplasm. Men working in these vapours were upset by them at first, but soon became accustomed to them, after which their health was not appreciably affected. Any action produced by large or summated doses of the two substances seemed to be similar on the kidneys, the skin (dermatitis), and the nervous system. In the two latter instances it may well be a fat-solvent effect. No opportunity has been found of studying the effects on the health (or blood) of men working in varnish alone.

The Stream Line Filter is the description given by Dr. Hele-Shaw to a process of continuous filtration described at a meeting of the Chemical Society on June 4. The filter consists essentially of one or more packs of impervious material (preferably paper, on account of lightness and cheapness), each pack being held between "press-heads." Each sheet is perforated with the same number of holes, but arranged in alternate rows of large and small holes, which in the pack (4,000 to 5,000 sheets of waterproof paper in the filter shown) form rows of large and small tubes. Filtration is effected by forcing liquid into inlet tubes (closed at opposite end), so that liquid has to escape through interstices of sheets to reach outlet tubes. The area of filtration is represented by the area of the inner surface of the inlet tubes, and this is reason for larger size. The filter shown was 2 ft. 6 in. high by 1 ft. square (with a quarter of a million large inlet and small outlet holes), and discharges at rate of 150 gallons per hour. The pressure needed depends upon fineness of filtration and viscosity of liquid (water 100 lb. per sq. in.). The inlet tubes can be washed in a few seconds, so that filtration can be continuous. Residue is removable without opening filter. During the demonstration with some laboratory filters colour was removed from coloured water, suspended matter and colour removed from paraffin used for cleaning machinery. The filter is designed for commercial use, and it is claimed that very severe filtration can be effected if necessary.

#### DENTISTRY

General Anæsthesia.—McCardie advocates the employment of nitrous oxide, with or without a small quantity of ether, as a general anæsthetic in dental practice ("The Lancet," I., 1923, 487). He reports no fatality during anæsthesia, nor has he used his tracheotomy set. One case in twenty-three required a major anæsthetic—ether or chloroform—solely or mainly. Of 91,734 anæsthesias given between 1896 and 1922 in the hospital to which he was attached, 3,500 were ethyl chloride, 200 ether, 88,000 gas alone. No oxygen was given. No deaths were recorded either during or after anæsthesia. His conclusions are summarised as follows:—(1) Dental operations should be concluded at one sitting, even if it means resorting to a major anæsthetic; (2) nitrous oxide, being the prolonged method, is the best routine anæsthetic for qualified men and students; for difficult cases, deep ether followed by light chloroform anæsthesia is best; (4) major cases should be dealt with only in hospital; (5) ether from an Ormsby inhaler gives the best results in the case of children and troublesome adults; (6) shock after long dental operations under gas develops mostly as the result of asphyxia, and the addition of a little ether during the anæsthesia will greatly improve the condition of the patient.

Tooth Brushes and Dentifrices.—J. O'Conor ("Lancet," I., 1923, 1131) has come to the conclusion that a large percentage of human woe—pyorrhœa, dental caries, etc.—is caused by the "inane" daily scrubbing of the teeth with bristles and the use of chemical dentifrices. He does approve, however, of gentle rubbing with a soft (badger hair) brush and some ordinary soda or other effervescing water at bedtime. In a subsequent issue of the same journal (p. 1238), A. T. Pitts states there is something to be said for the habit of brushing the teeth for its actual value in cleansing the mouth. The value of the tooth-brush has undergone many vicissitudes in dental opinion, and latterly the standard of value has risen, but the brush may do harm in three ways: If used promiscuously by several individuals, as may easily occur among children of the poorer classes, the tooth-brush may spread infection; if not cleansed after using, it may infect the gums; used with misguided zeal it can abrade both gum and tooth. The brush should be small, the bristles stiff and serrated, and crosswise brushing should be avoided. The chief movement should be from

the gums on to the teeth. The mouth should be rinsed, not by lolling the head, but by using the muscles of the cheek and tongue. The dentifrice should be free from gritty, abrasive particles; but it is doubtful if its chemical content is of any significance other than of giving freshness and conferring a somewhat fallacious feeling of security. Experiments have shown that chemical and mechanical methods of cleansing the mucous membrane failed to diminish appreciably the number and varieties of organisms present. The real function of tooth-brushing is to remove débris from the mouth.

#### ESSENTIAL OILS

Oil of Kanzea Corifolia.—In a paper read before the Royal Society of New South Wales in November 1922 F. P. Morrison gave the results of his analysis of this oil. The plant Kanzea corifolia, which is a bushy, darkgreen shrub 5 to 15 ft. high, is found in the neighbourhood of Sydney. A percentage yield of 0.26 to 0.52 of oil was obtained. The following were the physical characteristics of the oil:—Sp. gr. at 15° C. 0.9103 to 0.8917; optical rotation +12.0° to +25.6°; refractive index at 20° 1.4801 to 1.4902. Ester number after 1½ hours 9.94 to 15.48, and after acetylation 39.19 to 66.66. Three samples were insoluble in 10 volumes of 80 per cent. alcohol and one sample soluble. The colour ranged from light green to dark brown. On repeatedly distilling the lower boiling fraction of the crude oil a terpene was obtained, which was found to be d-a-pinene. The higher fraction was similarly treated, and a sesquiterpene, probably cadinene, was isolated. The ester number after saponification indicates the presence of alcohols in fair quantity. These, however, appear to be concentrated in a small fraction (boiling point 160°-185°). Acetic and butyric esters were also present in the crude oil in small quantities.

Essential Oils of Australian Melaleucas.-In a communication to the Royal Society of N.S.W., R. T. Baker and H. G. Smith ("Proceedings of the Royal Society N.S.W.," 1922, 56, 115-124) discuss the oils of Australian Melaleucas. They find that the oil of Melaleuca ericifolia has the following constants:— $n^{20}$  1.4705,  $\alpha_D + 13.3^{\circ}$ ,  $d^{15}$  0.8938. On distillation 52 per cent., consisting mainly of d-limonene, d-pinene, and dipentene with a small amount of terpineol and cineol, distilled over between 168°-190°; 26 per cent., mostly terpineol, between 190°-215°; the remainder was almost entirely a sesquiterpene. The oil, therefore, contains too much terpineol and too little cineol to replace rajuput oil which should contain 50 per cent. of cineol. The oil of Metaleuca deanei is obtained only in small quantities from the leaves of the plant and is of no commercial value. It consists in the main of d-pinene with about 15 per cent. of cineol and a little of what is probably terpineol. Its constants are :- $n^{22}$  1.4646,  $\alpha_p$  +22.7°, about 15 per cent. of cheef and a  $n = n^{2}$  1.4646,  $\alpha_{\rm D} + 22.7^{\circ}$ , d<sup>15</sup>0.3888. H. G. Smith, in another communication (Proceedings of the Royal Society N.S.W., 1922, 65, 156-161), also discusses the presence of lævo-phellandrene in the oil of *Melaleuca acuminata*. Its constants are:  $-n^{2}$ 0.4690,  $\alpha_{\rm D} - 12.8^{\circ}$ ,  $d^{15}$ 0.8935, acid value 1.1; saponification value 4.5, after esterification 21.2; and it contains 43.7 per cent. of cineol; 30 per cent. distills over between 165°-170°, and 62 per cent. between 170°-190°. After removal of the cineol 80 per cent. of the terpene residue distills over between 166°-172°. Lævo-phellandrene is recognisable by its nitrosite as being apparently the main constituent, but in all probability this Nuo-phellandrene will be shown to be not identical with that which occurs in the oils of the "peppermint group " of eucalypts.

Oil of Boswellia serrata (gum-oleo-resin). — J. L. Simonsen states ("Indian Forest Records," Vol. IX., Part VI., 1922) that, according to Pearson and Puran Singh, two previous investigators, the essential oil consisted almost solely of d-a-pinene and  $\beta$ -pinene, phellandrene being stated to be absent. In support of their

statement they offer no experimental evidence, and they did not apparently prepare any crystalline derivatives of either  $\alpha$ -pinene or  $\beta$ -pinene; the author is forced, therefore, to assume that they based their statement solely on the boiling-point of the oil and on analogy with other "turpentines." The author was struck by the very low density of the purified oil ( $D_{22}^{\circ}$  0.8371), and it appeared to him very unlikely that an oil possessing such a low density could consist mainly of a- and  $\beta$ -pinene, since oils containing these terpenes have, as a rule, a density of approximately 0.85. A careful examination of the oil has shown the main constituent to be d-a-thujene, a terpene which has not previously been found to occur in nature;  $\beta$ -pinene could not be detected in the oil, and it was only with much difficulty that the presence of a very small quantity of a-pinene was established. Pearson and Puran Singh's statement that the oil consisted mainly of a-pinene and  $\beta$ -pinene must, therefore, be regarded as erroneous, and it is highly regrettable that they should have given expression to this view in the absence of any experimental evidence to support it. In addition to d-a-thujene, the presence of d-a-phellandrene in small quantity was detected. The higher fractions of the oil contained sesquiterpenes and sesquiterpene alcohol. In addition, a small amount of a crystalline substance was isolated, but it was too small for identification. The oil which was obtained by the distillation in steam of the gum-oleo-resin had the following constants: Specific gravity at  $30^{\circ}, 0.8475$ ; refractive index 1.4613; optical rotation [a]  $\frac{30^{\circ}}{D} + 34.35^{\circ}$  acid value nil, saponification value 5.95, after acetylation 26.4.

The oil was faintly yellow in colour and had a pleasant ethereal smell. On keeping, the rotatory power of the oil was found slowly to change, since after two months the value was found to be  $\begin{bmatrix} a \end{bmatrix} \frac{30^{\circ}}{D} + 33.9^{\circ}$ . A second sample was examined and showed constants which agreed well with the first specimen examined, except as regards rotatory power ( $\begin{bmatrix} a \end{bmatrix} \frac{30^{\circ}}{D} + 0.59^{\circ}$ ).

Ocimene in Homoranthus Oil.—In a recent paper read before the Royal Society of New South Wales A. R. Penfold reported the discovery of 80 per cent. of ocimene in a species of Homoranthus. The discovery is of peculiar interest, as this olefinic terpene is of great rarity. Up to the present it has only been found in small quantities in the basil oil distilled in Java. Ocimene is closely related to myrcene. It has the following constitution: CH<sub>3</sub> C (CH<sub>2</sub>): CH CH<sub>2</sub> CH: C (CH<sub>3</sub>) CH: CH<sub>4</sub>. By his examination of the essential oils Mr. Penfold confirms the modern views of separate identity in the case of Homoranthus virgatus and H. flavescens. Specimens of the leaves of the terminal branches of the first-named were obtained from New South Wales and from Stradbroke Island off Queensland. The essential oil possessed a terpenic odour, and was pale yellow to reddish. The yield ranged from 0.35 to 0.97 per cent. and the oil possessed the following characteristics:—Specific gravity at 15° C., 0.08660 to 0.8927; optical rotation +18.5° to +28°; refractive index at 20° 1.4743 to 1.4818; insoluble in 80 per cent. alcohol (10 vol.). Ester number 1½ hours 6.03 to 6.16; after acetylation 27.65 to 31.30. On repeated distillation of the low boiling fraction a terpene consisting chiefly of d-α-pinene was obtained, apparently identical with that found in the various Leptospermum oils (probably eudesmol). In one of the N.S.W. samples amyl alcohol and paraffin were found and in the Stradbroke Island specimen isovaleric aldeluyde and paraffin. The oil of Homoranthus flavescens yielded from 0.35 to 0.82 per cent. of an oil with a pale straw colour with the distinctive odour of ocimene and possessing the following characteristics:—Specific gravity at 15°, 0.8206 to 0.8429; optical rotation, —1.75° to +2.0°. Refractive index 1.4835 to 1.4873; insoluble in 80 per cent. alcohol (10 vol.). Ester number after 1½ hours 9.46 to 45.87; after acetylation 69.66 to 85.43.

The abnormal saponification numbers are due to the presence of resinous matter which appears to increase soon after distillation. The lowest boiling fraction after treatment yielded d-a-pinene and ocimene, the main terpene being the latter. The higher boiling fraction yielded a sesquiterpene which is present in the oil of H. virgotus. Very small quantities of probably amyl alcohol and its acetic and butyric esters were obtained.

### FIXED OILS

Catalysis of Castor-oil.—Mailhe ("Comptes Rendus," Vol. CLXXVI., p. 37) succeeded in decomposing castor-oil contained in a copper tube, one half of which was filled with small blocks of aluminium and the other with copper turnings, heated to a temperature of 556° to 570°. The decomposition products consisted of water, acrolein, hydrocarbons, a small amount of cenanthic aldehyde, and gases.

Chaulmoogra Oil.—Following Roxburgh's investigations, it was generally accepted that Chaulmoogra oil is derived from Chaulmoogra odorata, Roxb. (also known as Gynocardia odorata, R. Br., and Chilmoria dodecandra, Ham.); recently, however, based on the results of Power's studies, opinion has favoured Taraktogenos Kurzii, King, as being the source of this product. A. Chevalier ("Bulletin Economique de l'Indochine." 1922, p. 185) expresses the view that probably oils possessing similar properties are obtainable from other species of Taraktogenos and also of Hydnocarpus, and he instances particularly Taraktogenos serrata, Pierre, T. subnitrega, Pierre, and Hydnocarpus anthelmintica, Pierre, as varieties occurring in Indo-China. He advocates that these plants should be protected from destruction, and recommends their cultivation in special plantations, to undertake a comparative study of the relative therapeutic value of oils of different origin.

Cod-liver Oil.—Drs. S. S. Zilva and J. C. Drummond, in a paper presented to the Society of Chemical Industry on April 9 (C. & D., 1923, p. 525), gave the result of the visit to Newfoundland for the purpose of investigating the conditions under which cod-liver oil is produced there. In 1916 the industry was placed under Government control through the Ministry of Marine and Fisheries. The direct steam process (introduced in 1903) is that used almost solely. Livers must be fresh without adhering gall bladders, brown and poor livers being discarded. Conditions laid down, require livers to be washed in clean water before steaming, and steam pan to be perfectly clean also. Steam is passed into livers until a white scum floats (usually requiring about 30 minutes), when steam is shut off and "brew" is allowed to settle for five minutes. The oil is then decanted and strained through flannel, calico, or moleskin into a cooling tank. The following day it is dipped and strained through a calico bag, whence it passes, through cheese-cloth into barrels. The first fraction only, termed "ordinary refined," is used for medicinal purposes. The liver residue or "blubber" is steamed again, and a second fraction called "common cod oil" is obtained, which is used industrially only. Refining consists of chilling to 18° F. (in tin vessels) for about three days, removing 3 to 5 per cent. of "stearine" by filtration and pressure. Determinated of vitamin value of oils showed this to be as high as the most active Finmarken oils (1.3 to 1.6 mg. on the standard of Zilva and Muira, "Biochemical Journal," 1921, 5, 654). Oils from livers of fish from north coast fish, though these appear to be different varieties anatomically. Some 30 samples from different localities and belonging to catches in three different years all showed the same high vitamin content, so that this appears to be a property of Newfoundland cod-liver oil as a whole. During the discussion it was stated that Norway sent 200,000 gallons of cod-liver oil to Great Britain each

### MATERIA MEDICA

Germicidal Qualities of Diosal.—Sodium di-iodosalicylate or diosal when used in a one per cent. solution was found to have a very powerful germicidal action on Staphylococcus aureus ("Lancet," I., 1923, 894). All catarrhproducing microbes were killed just as rapidly. The effect on the tubercle bacillus was very different, an improvement in growth resulting. Diosal was tried on a young man under treatment for tuberculosis of both lungs, and he made a remarkable recovery, living for six years afterwards and doing light duty.

Adulteration of Santonin.—G. Massatsch ("Pharmazeutische Zeitung," No. 35, 1923) had occasion to analyse a sample of santonin, of which the melting point and solubility in chloroform did not answer the requirements of the German pharmacopæia. Viewed under the microscope, the slightly yellowish powder was found to consist of a mixture of well-formed flat prismatic crystals and cubes. The sample was repeatedly extracted with chloroform and the collected insoluble residue recrystallised from absolute alcohol. The colourless prismatic crystals thus obtained had a melting point of 202°, assuming a yellow colour on exposure to light. Boiled with a solution of sodium carbonate, a pink solution resulted; a colourless solution resulted on dissolving the product in a mixture of equal parts of sulphuric acid and water, the resulting solution turning yellowish-brown on the addition of one drop of solution of ferric chloride. Massatsch was able to establish that the portion which was insoluble in chloroform consisted of pure artemisin, which is present in the mother lye in the process of manufacturing santonin. The sample analysed was found to consist of 16.8 per cent. of santonin and 83.2 per cent.

Neorobin is a derivative of chrysarobin made by dissolving the latter in glacial acetic acid and subsequent reduction with metallic tin. It is used by J. F. Schomberg and G. H. Raiziss at the Dermatological Institute, Philadelphia (U.S.P., 1,417,771), for the treatment of skin eruptions such as psoriasis and pityriasis capitis. Neorobin gradually oxidises on exposure to air, so that it is marketed in sealed tubes and is made extemporaneously into ointment when required for use. It does not stain the skin as markedly as chrysarobin. It melts at about 190° C., is slightly soluble in ether and methyl alcohol, more soluble in glacial acetic acid, chloroform, benzene, and alcohol. It dissolves readily in acetone to form a golden yellow solution, whereas chrysarobin forms a dark yellow solution.

Manganese in Chemotherapy.—Clinical experience with arseno-benzene had led the author to believe that the drug did not attack the Leucocytozoon syphilidis directly, but indirectly through the protein particles in the plasma ("British Medical Journal," I., 1923, 810). Microorganisms behaved in varying degree as condensers; thus among coccogenic bacteria the staphylococci were the most feeble, and of protozoa the Leucocytozoon syphilidis was the most potent. Conduction increased the number of the protein particles, diminished their size, hastened their movement, and augmented their negative charge. meant that the expanse of surface exposed to the parasites was increased enormously, and the additional negative charge enabled the protective substance to turn the tables on the parasites. If the parasites lost sufficient negative electricity they underwent lysis and were destroyed. The most suitable conductor was manganese, which in its colloidal hydroxide form was useful in the simplest infections. With the hope of finding a preparation equally beneficial in streptococcic and gonococcic infections he experimented, and found manganese butyrate the most efficient. In simple infections the degree of conduction required was not great, but there must be no condenser action. A one per cent. solution of manganese butyrate fulfilled these requirements. Of this preparation never more than three injections should be prescribed in any one course. In his experience two injections sufficed, and

these should be injected intramuscularly in 1 and 1.5 c.c. doses respectively, with three or four clear days' interval between them. Manganese butyrate was valuable in boils, carbuncles, erysipelas, whitlows, lymphangitis, and lymphadenitis, and useful in acute gonococcal urethritis, abscess formation, epididymitis, and in gonococcal septicæmia if given early. In septic conditions, including tonsillitis, quinsy, and even rhinitis, manganese butyrate should be given a chance before an incision is made. If prescribed in time, the lesion would abort, while if pus had already formed a single injection would bring it to a head. The pus should be evacuated through a small incision, and dry dressings and not hot fomentations applied. In operations on septic bones and joints manganese butyrate expedited healing.

Sodium Bromide Intrathecally.- Experiments have been made ("Lancet," I., 1923, 606) in order to determine the effect of sodium bromide solution on the meninges in cases of tabes with shooting pains in the lower limbs and in cases of spastic paralysis. A concentration beginning with 1 per cent, and gradually increased was used. most individuals no reaction is produced, but in the few cases in which a slight reaction does occur it disappears clinically within a few hours. Some of the cases were greatly improved, and slight benefit was obtained in others. In one case where death ensued four days afterwards probably from wards, probably from angina pectoris, microscopical examination of the meninges showed how little inflammatory change had been produced by the solution. The rapid diminution of the cells indicated that the meningeal irritation was not the direct cause of death. How the bromide acts therapeutically is not clear. It has no anæsthetic action on peripheral nerves, as can be demonstrated by subcutaneous injection, and that it does not remain long in the spinal canal is shown by the fact that twenty-four hours after injection less than a thousandth part could be recovered. Whether the action is chemical cr bio-mechanical following the reaction of the meninges must remain unsolved until further observations reveal the nature of the process.

Tryparsamide.—Tryparsamide is a new arsenical compound, elaborated in the Rockefeller Institute for Medical Research, the sodium salt of N-phenylglycineamide p-arsonic acid, the formula of which is

C<sub>6</sub>H<sub>4</sub>(NHCH<sub>2</sub>CONH<sub>2</sub>). (As O.OH.ONa).

The dried salt contains 25.32 per cent. of arsenic, in the pentavalent form, and occurs as a colourless, odourless powder, readily soluble in water. Tryparsamide is primarily a trypanocidal agent, but it possesses some spirocheticidal activity. It is proposed for use in the treatment of trypanosomiasis, syphilis of the central nervous system and late stages of syphilis with inactive or indolent lesions, and it is said to be especially indicated in the treatment of cachectic individuals. The drug can be administered subcutaneously, intramuscularly or intravenously. The minimum lethal dose varies between 0.75 and 2.75 gram per kilogram of animal. The favourable reports of the effect of tryparsamide "Journal of the American Medical Association," May 26, 1923) on trypanosomiasis and neurosyphilis appear to warrant controlled trials of the drug in these conditions. The possibility of larm to vision should be given due consideration, particularly in cases of neurosyphilis showing involvement of the optic nerve.

### MEDICINE

Treatment of Oriental Sore.—Injections of recently-prepared phosphorated oil B.P., into the nodule and around it, are suggested as treatment of Oriental sore: dermal leishmaniasis ("British Medical Journal," I., 1923, 283). The technique is as follows:—A sterile 20 minims all-glass hypodermic syringe is used; 5 minims of the oil are drawn in and injected into and around the lesion by inserting the syringe in two or three places into the nodule itself and under the skin around the periphery;

if the lesion is ulcerated, two or three drops of the oil, in addition, are dabbed on the fundus of the ulcer after removing the crust. The injections are given once or twice a week. The result in three cases has been very satisfactory, evidence of incipient healing appearing almost immediately after the second or third injection, and an apparently complete cure being obtained within three weeks to two months. Subcutaneous injections have been given of phosphorated oil in the treatment of rickets, osteomalacia, and in certain cases of very chronic material cachexia as an adjuvant to quinine and arsenic.

Treatment of Acne Vulgaris.—The following is recommended for obstinate cases ("British Medical Journal," I., 1923–840). All the cases treated were of over a year's duration, and other forms of treatment, including that by auto-vaccines, had failed. The author gives an intramuscular injection of collosol manganese every fourth day, one teaspoonful of levure de bière in water before every meal, and the following lotion dabbed on the parts night and morning:—Pulv. calamini 5iij., pulv. zinci oxidi 5iij., pulv. tragacanth. 5j., sulphur. ppt. 5ij., aq. calcis 3iij., aq. rosæ ad 5viij.

Collosol Manganese in Psoriasis.—In a case of six years' duration, after eight doses the patient appeared to be on the high road to recovery ("British Medical Journal," I., 1923, 558). Seven other patients were placed under treatment. The drug used was Crookes's collosol manganese, which was given by intramuscular injection. Vaseline was applied locally to the patches. No other medicine, internal or external, was used. The patients were girls of ages twelve to seventeen years. Dose: Four injections of 0.5 c.c. at four-day intervals, followed by doses of 1 c.c. for five to eleven days. One case improved, but there was a recurrence after four months. There was no improvement in four cases and slight improvement in two cases.

Acetylene Anæsthesia.—Already in 1885 Lewin reported that acetylene was an efficient anæsthetic, and it remained for G. J. Gauss and H. Wieland ("Klinische Wochenschrift," p. 113, 1923) to introduce its use in surgery. As an anæsthetic a mixture of 40 parts of acetylene and 60 parts of oxygen was employed, oil of pine being added to mask the unpleasant odour of the former. The authors report that this mixture was used in 515 major operations without producing any unwelcome effects. The advantages claimed for acetylene are: Rapid induction (insensibility in five minutes); simplicity of administration; safety; absence of struggling and excitement, and rapid recovery. The anæsthetised patients appeared to be in natural sleep and without change in colour; respiration appeared to be a trifle quicker than usual, and the temperature fell about 1 degree. It is stated that women patients testified that there were no unpleasant sensations and that post-anæsthetic vomiting was absent. Relaxation was not so complete as with chloroform, though it was adequate for major operations. The acetylene-oxygen mixture is used by Gauss in obstetrics, but he warns that, like all general anæsthetics, it diminishes uterine contractions.

Bismuth in Syphilis.—The spirocheticidal action of bismuth, demonstrated by Sazérac and Levaditi, has been confirmed by clinical experience, and numerous bismuth compounds have been tested with the object of finding the most active form in which to administer the metal in the treatment of syphilis. E. Ramel ("Schweizerische medizinische Wochenschrift," No. 12, 1923) is of opinion that the action is a property of the element itself, and is not modified by the molecular structure of the compound. He reports excellent results from the use of bismuth oleate (Oleo-Bismuth "Roche") of the formula (C<sub>17</sub> H<sub>33</sub> COO<sub>3</sub>) Bi, an oil suspension containing 0.05 gram of bismuth in each c.c. Intramuscular injections of 2 c.c. of this preparation were given twice a week, in all twenty to thirty injections, representing the incorporation of 2 to 3 grams of bismuth. Bismuth, it would seem, has a more rapid effect on the cutaneous

manifestations of syphilis than on the Wassermann reaction, which may persist long after the secondary eruptions have vanished. After numerous experiments with various bismuth salts, C. Levaditi states his preference for trépol (sodium and potassium tartro-bismuthate) ('Lancet,'' I., 1923, 642), and neotrépol. The latter contains 95 per cent, of metallic bismuth in suspension. It may be used for intramuscular injections, in doses of 1.5 to 2 c.c. repeated every three or four days. Sodium and potassium tartro-bismuthate and metallic bismuth achieve rapid cicatrisation of syphilitic lesions at all stages of the disease. Equal, from a therapeutic point of view, to arsenical preparations, better than mercurial preparations, bismuth (trépol and neo-trépol) is a valuable antisyphilitic remedy, particularly in those manifestations of the disease which resist the action of arsenic and mercury.

Ethylene as an Anæsthetic.—A. B. Luckhardt and J. B. Carter have found that a mixture of ethylene and oxygen possess marked analgesic and anæsthetic properties, without giving rise to a sensation of asphyxia, but producing on the contrary a sense of well-being and comfort. On the basis of clinical study ("Journal of the American Medical Association," May 19, 1923), comprising a series of 106 patients with and without cardiovascular, renal and other complications, ethylene-oxygen anæsthesia proved very satisfactory. Since it is possible to administer with the ethylene, on the avcrage, as much as from 16 to 18 per cent. of oxygen, asphyxia and its consequences are avoided, and cyanosis, so commonly seen with nitrous oxide, is conspicuously absent. Analgesia comes on surprisingly early. Considering, furthermore, that the relaxation is more complete than with nitrous oxide, the authors state that ethylene compares most favourably with ether. In fact, the impression is gaining ground that ethylene has some of the advantages of ether, without many of its troublesome after-effects. The very prompt recovery points to a rapid elimination of the ethylene, and may necessitate the administration of morphine immediately on the conclusion of an operation.

OPTICAL

New Theory of Miners' Nystagmus.—A theory which, if true, would entirely upset the conclusion arrived at two years ago by the Nystagmus Committee of the Medical Research Council—viz., that the chief factor in the causation of miners' nystagmus is deficient lighting, is propounded by F. Robson ("Lancet," I., 1923, 961), who contends that the main cause is the emanation of noxious gases from recently cut coal. His argument is that nystagmus may be due to anoxemia, that carbon monoxide is present as a constituent of occluded gases in highly volatile coals, and therefore nystagmus may be due to carbon monoxide. In support of this theory it is attempted to establish a relation between the prevalence of nystagmus and the percentage proportions of volatile matter found in coals. Taking South Wales, there is a progressive diminution in the volatile matter from east to west, and a corresponding decrease, as shown from the following figures (1909-19) in the percentage of men employed below ground who were reported as suffering from nystagmus:—

Volatile matter (per cent.)
Monmouthshire ... 29.50 gave 4.57
Glamorgan, East ... 21.19 gave 2.22
Glamorgan, West ... 15.50 gave 1.90
Carmarthen ... 11.87 gave 1.15

Time Factors in Vision.—A recent discovery of Professor Pulfrich, which is described by F. G. Smith ("The Optician," I., 1923, 171), establishes that the interval between the formation of an optical image upon the retina and its actual perception by the observer varies with the intensity of illumination. The detection of this difference, which is of the order of a few hundredths of a second, was first brought to notice by an effect observed with a stereo-comparator, but can be

demonstrated by the simplest of apparatus—a suitable clock or other pendulum, a fixed fiducial point for comparison, and a smoked or coloured glass being sufficient. A pointer is made to move by the hand-wheel and a smoked glass to put in front of one eye. The moving image will then appear distinctly in front of or behind the fixed pointer image if the movement is continuous in one direction—in front for one direction and behind for the other, the relation being reversed if the smoked glass is used with the other eye. It will now be clear that the space-difference perceived stereoscopically has its cause in the time-difference in perception arising from the difference in brightness between the two images. The discovery has what appear to be important applications to photometry—especially heterochromatic; by the use of this discovery a new method of comparing light intensities of different colours has been obtained. A point of interest to those engaged in sight-testing is that the stereoscopic effect described is produced in cases where the visual acuity is not the same in the two eyes. Also the less the acuity of vision the greater is the time between the first formation of an image and its perception.

Theory of Vision.—In a paper read before the Royal Society of Arts, recently, Edridge-Green stated there is every reason to believe that the means by which light stimulates nerve endings is through a photo-chemical reaction. The decomposition of the photo-chemical film, sensitised by the visual purple, stimulates the ends of the cones and a visual impulse is set up which is continuous and a visual impulse is set up which is continuous. veyed through the optic nerve fibres to the brain. The cones corresponding to the light parts of the photograph are those which are stimulated. The function of the rods is to regulate the supply of visual purple to the film in accordance with the amount of light falling upon the eye. In certain cases of diseases of the eye some portions of the periphery supplying visual purple are destroyed, and on examination it will be found that whilst with both eyes the visual acuity is normal in ordinary daylight and remains normal for the healthy eye when the light is diminished, it will drop considerably for the affected eye. The theory which supposes that the rods are percipient elements for perception in a dim light, whilst the cones are the percipient elements in daylight, is a very irrational one, for it is difficult to conceive an element stimulated by the decomposition of a photo-chemical substance which is excited by a week light and not proposed. stance which is excited by a weak light and not more strongly by a brighter light. Apart from the numerous facts against this theory, it will be found that it is supported almost entirely by misstatements, namely: (1) That certain animals have only cones, and others have only rods; (2) that the periphery of the retina is colour-blind; (3) that the eye is totally colour-blind in dark adaptation; (4) that the Purkinje phenomenon and the recurrent image are not found with the fovea. (1) Though he had examined numerous collections, the author had never been able to find any animal with only rods or only cones, nor anyone who had seen such a retina. tortoise is the most quoted; it is stated to have only cones. The rods and cones in the retina of the tortoise are as clearly defined and distinct as in the human retina.
(2) The periphery of the retina is not colour-blind when colours of sufficient intensity are used. (3) In dark adaptation the eye is not totally colour-blind. (4) The colours of sufficient intensity are used. Purkinje phenomenon and recurrent image are found with the fovea,

Refraction.—In a paper on this subject T. H. Butler ('British Medical Journal,'' I., 1923, 843) states that, using the ordinary Snellen's test types with standard illumination, the normal standard of acuity must be taken not as 6/6 but as 6/4.5. For all ordinary work 6/12 is sufficient, so if the acuity is 6/12 or better glasses are not called for in the absence of symptoms due to an error of refraction. The retinoscopist must learn to use both eyes with equal facility, otherwise when a cycloplegic is not employed he cannot refract near the macula. In difficult cases it is wise to use cylinders as well as spheres. When the astigmatism has

been approximately determined place the appropriate cylinder in the trial frame and alter it till a sphere corrects both meridians simultaneously. This method is Errors in retinoscopy depend almost very sensitive. entirely upon failure to work near the macula. In many eyes the posterior pole is not truly spherical, and slight eccentricity in the retinoscopy may introduce an error of a dioptre or more. Generally speaking, retinoscopy should be accurate to within a quarter of a diopter, but there are cases with secisor shadows and other manifestations. there are cases with scissor shadows and other manifestations of irregular astigmatism in which the limit value is far higher. The author disputes the theory that close work causes myopia and that statistics prove that progressive myopia of the worst type, with fundus degeneration, is more common in agricultural than in urban districts, while recent figures published by Thomson show that severe myopia is commonest in myining districts less as in agricultural areas, etillaless, mining districts, less so in agricultural areas, stilleless The suggestion is that during the act of accommodation and convergence the intraocular pressure rises and gradually distends the organ. It has not been proved that such a rise of tension actually takes place, and even if such were the case the conditions found in the myopic eye are not those which are present in an eye which has been subjected to real well-defined high tension. In glaucoma the hypertony is associated with cupping of the optic disc, whereas in myopia the stretching is more evident further forward. It is by no means uncommon to find myopia in infants, who have not used the eyes for near work, and cases are common with high myopia in one eye alone. These facts are We must seek another cause, and we find it in heredity.
Meniscus lenses and torics are best avoided for the following reasons: the optical advantages are largely theoretical, they are fragile and expensive, and they are theoretical, they are fragile and expensive, and they are disfiguring. No woman should wear torics. A pair of flat lenses with a delicate central mount is almost invisible, and gives a glint of light in but few positions. The toric reflects light in every position and gives the wearer a glazed appearance, hiding the eyes. Except for special occupations there is little or no advantage in Crookes's glass, which is expensive and absorbs much useful light. useful light.

### PHOTOGRAPHIC

Action of Hydrogen Peroxide on Emulsions.—Sheppard and Wightman ("Journal Franklin Institute," I., 1923, 337) have investigated the action of hydrogen peroxide on photographic gelatin-silver halide emulsions with that of light. It is shown that the curves for different times of development are similar to the H. and D. curves. The action on the photographic emulsion is reduced by increasing the alkalinity of the peroxide. It is unlikely that it acts as a reducing agent on the silver halide, and the suggestion that its action is due to an oxidative attack on the gelatin protecting the silver halide grains is considered improbable. A tentative theory is suggested that the decomposition of peroxide is chemiluminescent, short wave-length radiation being afforded at the surface of the silver halide grain, and particularly at photosensitive nuclei.

Sulphur Toning.—W. E. A. Drinkwater ("British Journal of Photography," I., 1923, 204) reviews the processes which have been recommended for accelerating hypo-alum toning and describes the following one which he uses for obtaining superior tones by this process more quickly than by the ordinary method. Exposure is increased approximately 25 per cent. on that required for a good black. Development is conducted in a solution only 10 per cent. the strength of that used for black prints, and development is not carried beyond five minutes at 65 deg. F. Prints are passed direct from the developer without washing into the fixing bath, and care is exercised to see that the prints do not lie too closely upon one another, and that the fixing agent has free access to all parts of each print. The fixing bath (which also hardens) is :—Hypo 12 lb., alum 3 lb.,

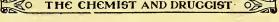
water 8 gallons, omitting entirely metasulphite or any other sulphite. The minimum time for fixing is thirty minutes, which not only ensures thorough fixation by the hypo, but also sufficient hardening by the alum to withstand the later hot hypo-alum bath. The sulphur bath is made up as follows:—For a batch of 80 to 100 strips of postcards one ounce of sulphuric acid is added to 180 ounces of water; to this is added four ounces of hypo previously dissolved in a little hot water. The sulphur bath is not made up until the prints are ready for it, when they are passed into it one at a time without intermediate washing. When all are in, the whole batch is quickly gone through, constantly bringing the bottom one to the top until it is ensured that all have had the direct action of the sulphur and they are then left for ten minutes, whilst the usual hypoalum bath is heating. The sulphur bath is then thrown away, and clear water replaces it, although no attempt is made to wash the prints. If the toning bath is kept at 100 deg. to 110 deg. F. toning is completed in a few seconds, and four or five prints are as many as can be attended to at one time. The usual washing completes the process.

Red Toning of Sulphide-toned Prints.—In a paper entitled "The Chemistry of the Red Toning of Sulphide-toned Prints," by A. and L. Lumière and A. Seyewetz, presented at a recent meeting of the Faraday Society (C. & D., May 26, p. 730), the conclusions arrived at are as follows: (1) Silver images which have been sulphide toned obtain a colour ranging from brown to red-chalk in a solution of gold chloride, to which has been added a sulphur compound, such as thio-urea, thio-sinamin, ammonium sulphocyanide, or ammonium thio-sulphate; (2) this toning takes place only with silver sulphide, and only on the condition that a sulphur compound is present in the gold toning bath; (3) the silver sulphide, during the toning process, fixes a considerable quantity (about 133 per cent. of the weight of the silver) of gold, and also a proportion of sulphur, somewhat greater than that corresponding with the formation of gold sulphide; (4) the toned image thus appears to consist of a double sulphide of silver and gold.

Ortho-amidophenol Sulphate as a Developer.—Ermen ("British Journal of Photography," I., 1923, 299) describes the properties of ortho-amidophenol sulphate as a developer yielding brown tones with or without the addition of other chemicals, but it was found that every plate or paper gave a tone peculiar to itself. The formula used in the experiments is as follows:

illiaia asca in the	c.spermiones	15 05	TOIL	0 113 .
A. Ortho-amidopher	nol sulphate			5 gm.
Bisulphite of sod			٠.	35 c.c.
(or potassium me	etasulphite)			25 gm.
Water to		• •	• •	200 c.c.
B. Caustic soda	• • •	• •	• •	10 gm.
Water to	• • • • • • • • • • • • • • • • • • • •	• •		100 c.c.
C. Alpha naphthol	••	• •		5 gm.
Solution B	• • • • •	• •		30 e.e.
Water to				500 c.c.

For use take 20 c.c. of A, 8 c.c. of B, and dilute to 100 c.c. If a lantern plate is given a normal exposure behind a suitable negative and developed with the above solution it will yield a brown toned image, the shade of which varies with the nature of the emulsion. In order to obtain a more contrasty slide from a given negative, and a deeper shade of brown, take 20 c.c. of A, 8 c.c. of B, and 45 c.c. of C, and dilute to 100 c.c. On most makes of bromide paper the mixture of A and B alone gives rather disappointing washed-out looking browns; the best results are obtained by using a contrasty negative. An exposure up to eight times the normal amount does little but slightly flatten contrast in the print. Kodak Royal White has given the most satisfactory results. Of gaslight papers the only one tried was soft matt velox. Without the addition of any bromide this gives clear, bright prints of a very slightly warm black, providing that exposure has been such as to complete development in 60 seconds at a temperature of 63 deg. F. and an acid fixing bath is used. Without



alpha naphthol the prints are similar in colour, but not quite as contrasty. In order to obtain good strong browns on bromide paper the developer containing alpha naphthol as recommended for lantern slides may be used. If hydroquinone is added to A solution, the tone is darkened and contrast increased; the addition of 1 gram of hydroquinone is sufficient to give a good cold brown, whilst with 5 grams of hydroquinone the tone is a warm black. Pyrocatechol or pyrogallic acid added in the same proportions give browns with an olive cast; but when these are used, the volume of B solution must be somewhat decreased, so that the amidophenol base which is at first precipitated is not all redissolved.

### VETERINARY SURGERY

Prevention of Goitre.-A daily dose of two grains of potassium or sodium iodide throughout the gestation period given to sows, ewes, cows or mares prevents goitre in their offspring, state Hart, Steenbock and Morrison (Wincossin Experiment Station, Bulletin 350). It is recommended that the salt be dissolved in water (one ounce to the gallon) and a tablespoonful mixed with the fixed for each animal feed for each animal.

Blackhead of Poultry.—A disease which is very difficult to prevent and eradicate, infectious entero-hepatitis, is a communicable disease of turkeys and chickens characterised by an inflammation of the intestines, mainly the cæca and the liver. It is commonly called blackhead (see "Veterinary Counter Practice," p. 352). Ipecacuanha, sulphur, triple sulphocarbolates and catechu have been used as remedies, but the first two drugs have been proved worthless by carefully conducted experiments (Stafseth, "Quarterly Bulletin," 5, 2, 79, Michigan Agricultural College). Claims have been made that affected fowls have benefited by triple sulphocarbolates, but excellent results are claimed by the use of powdered crude catechu, one teaspoonful of which is put in each gallon of drinking water while the outbreak lasts. This dosage is for adult turkeys. The flock should be prepared by feeding sparingly for one day. The following morning one to five teaspoonfuls of Epsom salts is given to each ten fowls (dose depending on age and size of birds) in a wet mash, the latter not being more than will be cleaned up at one meal. The following afternoon put catechu in the drinking water. Epsom salts should be given from time to time. cuanha, sulphur, triple sulphocarbolates and catechu have

Tuberculin Testing.—Ernest and Lash, in a circular (No. 249) recently issued by the United States Bureau of Standards state that from October 1, 1920, to August 31, 1922, the methods and number of cattle tested were: (1) Subcutaneous, 427,069; (2) intradermic, 2,807,516; (3) ophthalmic, 6,509. The intrapalpebral test was also employed. The authors state that "more was also employed. The authors state that "more recent study and the use of other methods have shown that the subcutaneous test probably lends itself more to the assistance of those who desire to defeat its ends than does any of the other tests." The failures of the subcutaneous test may be classified under two headings: (1) Those not disclosing infected animals; (2) classifying animals as reactors when a slight thermal disturbance may be due to other causes. In using the subcutaneous test on cattle which have apparently been immunised against the action of tuberculin, it should be used only with another method in combination, and larger doses of tuberculin should be employed. The advantages of the subcutaneous test are that it entails more detailed information on the test records, and is usually very accurate when applied to a herd for the first time. It lends itself readily to combination with the ophthalmic test, but is not advisable in young animals with erratic temperatures, or those hard to restrain. The intradermic test is stated to be as reliable as any other applied alone. It lends itself readily to combination with the ophthalmic test. The injection must be carefully performed. The ophthalmic test is best accomplished by means of discs, a sensitising disc being used

prior to the diagnostic disc. This test is especially valuable in those cases in which the disease has progressed to able in those cases in which the disease has progressed to an advanced stage. An animal will usually react on repeated treatments. It lends itself readily to combination with other methods. The tuberculin is used on a very sensitive organ, which by reason of injury may give results not always clear to the operator, who may not make a searching examination of the eye. It is strongly emphasised that the successful application of two or more simultaneously depends entirely upon the attention given to each. The usual procedure is to use only two methods, but at times it may be necessary to apply all three of the major tests. The following are the combinations which can be used: (1) Intradermic-ophthalmic: (3) intramic-subcutaneous; (2) subcutaneous-ophthalmic; (3) intra-dermic-ophthalmic; (4) intradermic-subcutaneous. From October 1920 to August 1922 699,177 cattle were tested by various combinations. For economy and practicability the intradermic and ophthalmic tests are most desirable, as they form a check against each other.

### Dietetic Management

THE following table has been in use in both hospital and private practice for nearly twelve months with satisfactory results ("British Medical Journal," I., 1923,

Diet Scale

One ounce of carbohydrate or protein yields 120 calorics. One ounce of fat yields 270 calories.

One ounce of carbohydrate is contained in-

- 1½ oz. dry oatmeal (contain ¾ oz. protein, 1/10 oz. fat).
  1½ oz. shredded wheat biscuits (contain ½ oz. protein).
  1 pint of milk (contains ¾ oz. fat, ¾ oz. protein).
  1½ pint cream (contain 1 oz. protein, 6 oz. fat; rich cream contain 12 oz. fat).
- 5 oz. potatoes (contain 1/6 oz. protein).
  5 oz. baked beans (contain \( \frac{1}{3} \) oz. protein, 1/10 oz. fat).
  5 oz. boiled rice or macaroni.

- 13 oz. briead or toast (contain 1/6 oz. protein).
  10 oz. strawberries, lemons, or oranges.
  10 oz. Brazil nuts (contain 1½ oz. protein, 7 oz. fat).
  12 oz. filbert nuts (contain 1 oz. protein, 7 oz. fat).
- 10 oz, carrots or onions.
- 20 oz. grape fruit.
- 20 oz. ripe olives (contain ½ oz. protein, 5 oz. fat). 6 oz. apples, currants, pears, cherrics, grapes. 5 oz. plums, bananas, or prunes.

- 2) oz. tomatocs or radishes.
  2) oz. lettuce (contain ½ oz. protein).
- 1 pint beer.
- pint stout.
- pint port wine.
  Thrice-cooked spinach, celery, or cabbage contains no carbohydrates; the carbohydrate in soy bean or mushrooms is not assimilated.

One ounce of protein is contained in-

- 10 oz. smoked uncooked bacon (contain 6 oz. fat).
- 6 oz. ordinary uncooked bacon (contain 3 oz. fat).

- 6 oz. ordinary uncooked bacon (contain 3 oz. fat).

  12 Kalari biscuits (Callard).

  5 oz. lean smoked ham (contain 1 oz. fat).

  5 oz. lean uncooked beef or mutton (contain ½ oz. fat).

  4 oz. roasted lean beef or mutton (contain 1 oz. fat).

  6½ oz. corned beef (contain 2 oz. fat).

  5 oz. fresh fowl (contain 1½ oz. fat).

  5 oz. boiled cod, haddock, sole, or whiting.

  7 average sardines (contain 1 oz. fat).

  2 large or 3 small hen's eggs (contain 1 oz. fat).

  4 oz. cheese (contain 1½ oz. fat) (American, Cheddar, Theshire). Cheshire).
- One ounce of fat is contained in-
  - 15 oz. fresh butter.
  - 1 oz. oleo margarine.
- 1 oz. lard, cod-liver oil, olive oil. One ounce of whisky, brandy, rum, or gin yields 103

Requirements: Calories per day in the form of-

- oz. carbohydrates.
- oz. proteins.oz. fat.

### Pharmaceutical Botany

XIII. Male Fern

THE leaves in male fern fulfil a dual purpose, being The leaves in male fern fulfil a dual purpose, being assimilatory (vegetative) and bearing sporangia (reproductive). Some ferns such as the royal fern (Osmunda regalis) show a division of labour between vegetative and reproductive parts of the leaf, but specialised spore-bearing leaves or sporophylls are not collected together on dwarf shoots to form "flowers," as in higher plants. Fern leaves are, however, quite comparable in complexity of structure and shapes with those of flowering plants. Thus male fern has a "compound" leaf, so termed because the blade (or lamina) is subdivided into leaflets (Fig. 35 (1)). Each leaflet or pinna is deeply lobed Fig. 35 (1)). Each leaflet or pinna is deeply lobed so that it is nearly subdivided again into segments called pinnules (Fig. 35 (2)). The terminal veins (small vascular bundles) fork in a manner characteristic of ferns (Fig. 35 (2)). The sporangia are borne on the under side of the leaf in sori in two rows (over veins) on each side of the midrib. A section through a sorus shows sporangia in various stages of development. The sporangium which arises from a single superficial cell (see Fig. 35 (3) for stages of development) consists of a stalk of two or three rows of cells bearing a flattened watch-

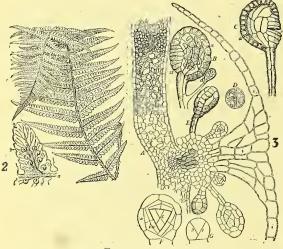


Fig. 35.—Aspidium Filix-mas.

F16. 35.—Aspidium Filix-mas.

1. Frond with two rows of leaflets or pinnæ. 2. Segment or pinnule with sori. 3. Section through sorus, with sporangia growing from cushion of tissue (placenta) prolonged upwards into sheltering indusium (i). A. Transverse section through leaf which is several cells thick. Central tissue (mesophyll, mesomiddle) has numerous intercellular spaces (spongy parenchyma).

B. Nearly ripe sporangium with thickened annulus (a) and thin stomium (s.t.). C. Ripe sporangium splitting open by contraction of cells of annulus at thin cells of stomium (s.t.). G. 1 and 2 indicate first walls formed in initial cell which develops into a sporangium. F. Later stage show wall cells (w), central sporogenous cells (c), and nutritive cells (iw).

shaped spore-case with usually forty-eight (sometimes sixty-four) dark-brown spores. A reduction division occurs during spore formation, each spore mother cell giving rise to four spores (Fig. 35 (D)). Only the inner cells are fertile (or sporogenous, Fig. 35 F (c)), the ceils surrounding becoming disorganised and sacrificed to nourish the developing spores. The spore case is only one cell thick, but has a marked "annulus" of cells (with thickened inner and lateral walls) three parts of the way around it. The remainder of cells completing the circuit are wide and flat with thin walls, and it is here (the "stomium") where the sporangium ruptures by contraction of the cells of the annulus as they dry up. The annulus on drying straightens out shaped spore-case with usually forty-eight (sometimes they dry up. The annulus on drying straightens out like a spring, and the action in tearing sporangium walls is so violent that the dust-like spores are flicked out from under the indusium into whatever breeze there may be. Note that spore distribution occurs in dryweather conditions.

### Summer Outings

A B.D.H. Outing

The Motor Transport and Garage employees of The British Drug Houses, Ltd., held their annual outing, on June 24, at Ramsgate, under ideal weather conditions, and a most enjoyable day was spent.

### Southport Chemists' Outing

Southport chemists and their ladies had a pleasant evening outing on June 14, when they chartered motors and toured delightful scenery in the direction of Barton and Freshfield. An enjoyable time was spent, and the contribution which Mr. Stephenson (Warwick Bros., London) made from his large stock of recitals was much appreciated.

Eno's Sports Meeting

On June 23 the members of the Eno Recreation Club held their second annual sports meeting at the Sports Ground, Weigal Road, Lee. Under delightful weather conditions over 300 members and their friends enjoyed the facilities extended to them by the managing director (Col. F. Allhusen, C.M.G., D.S.O.) and the board of directors. The many events arranged were successfully carried through, and a most enjoyable afternoon was spent. The championship cup was won by Mr. F. Coombs, a member of the works staff, while Miss P. Targett, also of the works staff, was awarded the championship prize for the lady competitor scoring the most points. An excellent lunch and tea was provided on the ground, and the band of the Royal Hospital School played selections during the afternoon. At the terminative of the restriction of the research of the restriction of the r F. Allhusen, and a vote of thanks on behalf of the members of the Recreation Club was proposed by the sales manager, Mr. A. Proctor Atkinson.

### Bradford Chemists' Outing

INSTEAD of the usual excursion by train or motor charabanc, the members of the Bradford Pharmaceutical Association and their friends, on the occasion of the annual outing, on June 20, walked part of the way. They travelled as far as Cottingley Bridge, on the Bingley route, by tramcar, and thence proceeded afoot by the charming riverside walk along the wooded bank of the Aire to Beckfoot—a spot at which the Harden Beck,



BRADFORD CHEMISTS AT GOIT STOCK.

shortly before joining the main river, is spanned by a quaint and very ancient packhorse bridge, close to an hisquaint and very ancient packhorse bridge, close to an historic building, one associated with the Knights Templars and also with the Cistercian monks, and now a farm. From here the way was up the deep ravine of the Harden Valley, thickly wooded, steeped in interest for the botanist and of allurement to the geological student. After tea the President gave a hearty welcome to the visitors. The delightful waterfall and woods of Goit Stock were visited, and an "alleged" cricket match was played, in which the ladies did all the batting and the gentlemen used the ball in an effort to dislodge them. The return journey to Bradford was made by motor coach. journey to Bradford was made by motor coach.

### Personalities

Mr. A. E. Hobbs, J.P., Ph.C., Tunbridge Wells, has been appointed a Senior Deacon of the Provincial Grand Lodge of Kent Freemasons.

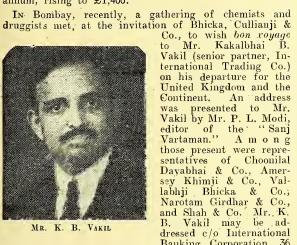
Mr. F. R. SUTCLIFFE, chemist and druggist, Buxton, was elected President of the Chemists' Dental Society at the annual general meeting held on June 21.

At a meeting of the Royal Society on June 20, Mr. F. Harrison Glew, radiographer and pharmacist, illustrated with an arrangement of magnets recent work on atomic structure.

MR. H. S. WARD, chemist and druggist, who has for many years carried on business in Kirkham, Lancashire, and is vice-chairman of its urban district council, is leaving England for the purpose of joining his son in Australia.

Mr. D. R. Wallis, manager and buyer for Rocke, Tompsitt & Co. Proprietary, Ltd., manufacturing chemists, Australia House, London, W.C.2, completes twenty-five years' service with the company during the current year.

On June 15 the Islington Borough Council passed a resolution by which the salary of its medical officer of health, Dr. G. Clark Trotter, was reduced to £1,000 per annum, rising to £1,200. Dr. Clark Trotter was appointed in 1921 at an initial salary of £1,100 per annum, rising to £1,400.





Banking Corporation, 36 Bishopsgate, London, E.C.2, during his visit.

DURING the meeting of the Society of Chemical Industry at Cambridge on June 21-23, it was announced that the Council had decided to elect as honorary members Dr. C. F. Chandler (President of the Society in 1899), M. Paul Kestner (France), Prince Gionori Conti (Italy), and Sir Dorabji Tata.

A PORTRAIT and biographical sketch of S. W. H. Ingham, the jockey who won the Royal Hunt Cup for the King at this year's Ascot meeting, appeared in the "Evening Standard" of June 21. Ingham, as explained in this column some weeks ago, is a son of Mr. W. L. Ingham, chemist and druggist, Penge, London, S.E.

COUNCILLOR C. A. CRITCHLEY, Ph.C., headed a party of members of the Blackburn Chamber of Trade (of which he is President) on their first visit to Chester on June 21. Those present included Mr. R. Pickup and Mr. Fred Law, President and secretary respectively of the Blackburn and District Chemists' Association.

At the annual meeting of the Provincial Grand Lodge of South Wales (Western Division), held at the Masonic Hall, Haverfordwest, on June 19, the Right Worshipful Provincial Grand Master (Lord Kensington, C.M.G., D.S.O., P.G.W.) conferred the rank of Superintendent of Works upon W. Bro. Edward W. Wynne, chemist and druggist, of the Aberystwyth Lodge, No. 1072.

## Births

Notices for insertion in this column must be properly authenticated.

Dickson.—At 16 Marlborough Street, Londonderry, on June 17, the wife of Arthur E. Dickson, Ph.C., of a

ELLIS.—On June 21, the wife of William Ellis, chemist and druggist (proprietor, Newton Wright, Ilford), of a

FAVARD.—At Port Elizabeth. C.P., South Africa, on May 30. Edith Mary Favard, M.P.S. (née Winser), wife of A. Tony T. Favard, South African representative of Ayrton, Saunders & Co., Ltd., manufacturing chemists, Liverpool, of a daughter.

MILLER.—At the Gables Nursing Home, Newcastle-on-Tyne, on June 15, the wife of Alec D. Miller, chemist and druggist, 69 Woodbine Road, Gosforth, of a son.

## Marriages

BISSET-STEWART.-At Corstorphine Parish Church, on June 14. James Bisset, chemist and druggist, son of Mr. J. Bisset, chemist and druggist, Fairfax House, Burntisland, to Nancy, youngest daughter of Mr. J. W. Stewart, Balgreen Avenue, Murrayfield, Edinburgh.

Weston — Kesterton. — At St. John's Church, Wallasey, on June 20, Arthur Eyton Weston, M.P.S., second son of Mr. J. H. Weston, chemist and druggist, Runcorn, to Violet Grace Kesterton, M.P.S., daughter of Mr. Walter Kesterton, chemist and druggist, Liscard, Wallasey.

## Deaths

Brown.-At 17 Gilmour Road, Edinburgh, on June 19, Mary, daughter of the late Mr. D. R. Brown (J. F. Macfarlan & Co., manufacturing chemists, Edinburgh and London), aged eighty.

ELLITHORNE.—At Oxton, Birkenhead, on June 23, Mr. Arthur Henry Ellithorne, retired chemist and druggist,

Mr. Elliaged sixty-one. thorne qualified in 1885, and in the following year purchased a business from Dr. Charles Symos, Liverpool. In September 1902 he opened a pharmacy in Wellington Road, Oxton, which he Oxton, carried on for sixteen years: he business subsequently bassed to his son, Mr. H. C. Ellithorne, chemist and drug-gist. Mr. Ellithorne was an active member of the Birkenhead and Wirral Chemists' Association for several years, and his services resulted in his election as its President in 1907.



MR. A. H. ELLITHORNE

GATWARD .- At Hitchin, on April 2, Mr. Oswald Gatward, retired chemist and druggist, aged sixty-two.

GRIFFIN.—In a Birmingham nursing home, on May 24, following an operation, Mr. James Frederick Griffin, chemist and druggist, 95 Stirling Road, Edgbaston, and 139 Monument Road, aged fifty-eight.

HUNT.—At Boutringham Hall, Cheshire, on June 25, after a long illness, Mr. Giles Hunt, chairman of Joseph Crosfield & Sons, Ltd., and of The Erasmic Co., Ltd.

NORTH.—At Cranbrook, Newent, Glos., on June 19, Louisa, the beloved wife of Mr. Samuel James North, chemist and druggist (formerly of Grimsby, Birmingham, and Midsomer Norton), aged sixty-four.

## Trade Notes and Novelties

Ashes of Roses

A. Bourjois et Cie, Ltd., 66 Carter Lane, London, E.C.4, send for our inspection the group of Ashes of Roses specialities shown in the company's advertisement in the C. & D., June 23. The preparations are beautifully packed and the sample box illustrated should sell readily at 1s. 6d.

"Handbook of Surgical Appliances."

J. H. Haywood, Ltd., Castle Gate, Nottingham, have issued a new edition of their "Handbook of Surgical Appliances," which chemists will find useful. The book is divided into sections dealing with (1) varicose veins, (2) trusses, (3) suspensory bandages, (4) ladies' and gentlemen's belts, (5) chest expanding braces. The particulars given enable a chemist to fit the appliances accurately.

G.O. SEIDLITZ POWDERS

Mr. J. Milner (The Greenwich Lemonade Co.), 11 John Penn Street, London, S.E.13, sends us a photograph of a window display of G. O. Seidlitz Powders. Although at first sight it would not seem a promising subject for a complete window show, it will be seen that by the judi-



cious use of showcards and dummy packages a very effective display results. The colour scheme was yellow and black, and Mr. Milner informs us that despite the chilly weather at the time, his pharmacy at 209 Trafalgar Road, where the window was arranged, experienced a boom in G. O. Seidlitz Powders.

#### INSETS IN THIS ISSUE

The system of insets which some of our advertisers prefer has brought us some very attractive advertisements. The following are particulars of the insets :-

ments. The following are particulars of the insets:—
ALLEN & HANBURYS, LTD., 37 Lombard Street, London,
E.C.3, have an inset beautifully printed in colours, devoted
to Allenbury's Fruitine confection.
H. Bronnley & Co., LTD., Acton, London, W.3, enclose
a specimen of their advertising in the Press, to which
wholesale prices have been added for the purpose of
addressing the trade.

Drayton Paper Works, LTD., give a specimen of the
Drayton Mill manilla toilet paper, which is supplied in
rolls and cartons. The paper is impregnated with an
antiseptic.

DEMUTH'S LABORATORIES, 68 Salisbury Road and Montrose Avenue, London, N.W.6, specify their main lines, which include Carnate nail polish paste.

J. C. Eno, Ltd., Victoria Embankment, London, E.C.4, have on their inset a reproduction of the familiar wrapper used on Eno's Fruit Salt.

Genatosan, Ltd., Loughborough, show reproductions in colour of their showcards for Genasprin and Formamint. Chemists are invited to book up window-displays.

Keene's "One-Night" Cures, Ltd., Keene's Laboratories, 52 Gray's Inn Road, London, W.C.1, refer to the coming demand for Keene's "One-Night" corn cure, and give particulars of window shows, for which they ask the cooperation of chemists.

operation of chemists.

POTTER & CLARKE, LTD.. 60-64 Artillery Lane, London, E.1, have a four-page inset devoted to reproductions in colours of their packed goods and specialities.

#### ACELTA CAPPING SOLUTION

The Acelta Capping Co., Ltd., 185 Princess Street, Manchester, whose bottle-capping solution has been referred to in the C. d D., have prepared a pamphlet explaining the uses of the preparation. The company also send us a shade-card, which has upon it strips coloured with the various shades of Acelta capping solution. This is a useful idea for those who desire to adont special colours for packed articles. adopt special colours for packed articles.

FASSETT & JOHNSON, LTD., 86 Clerkenwell Road, London, E.C.1, announce price reductions in Mennen products.

ENOLIN, LTD., 201 King Street, Hammersmith, London, W.6, give particulars of a bonus scheme in connection with Enolin tooth paste.

AYRTON, SAUNDERS & Co., LTD., Liverpool, make in this issue a special offer of dispensing bottles, which is worth consideration.

"SUPER SPEEDY" MILL.—S. W. Wilkinson & Co., Western Road, Leicester, illustrate an improved mill for mixing and grinding ointments, tooth pastes, etc.

BAYER PRODUCTS, LTD., 1 Warple Way, Uxbridge Road, London, W.3, has acquired the trade-marks and patents covering the Bayer pharmaceutical products. A price-list will be sent on request.

Areco, Ltd., 4 Belsize Crescent, Hampstead, London, N.W.3, have appointed Waterhouse & Co., Ltd., 24 Holborn, E.C.1, as sole sales organisers for their wellknown toilet requisites and perfumery.

CLOSED FOR STOCK-TAKING .-- Arthur H. Cox & Co., Ltd., manufacturing chemists, Brighton, inform us that their premises will be closed, except for urgent orders, on June 29 and 30 for stock-taking purposes.

W. MARTINDALE, 10 New Cavendish Street, London, W.1, advertise in this issue two chemicals new to medicine. These are Aspriodine and Sedasprin, which are respectively combinations of iodine and bromine with aspirin.

"The British Pharmaceutical Codex, 1923," will be on sale on July 2. The price is 30s. (postage 9d.) from The Pharmaceutical Press, 17 Bloomsbury Square, London, W.C.1. An advertisement of the book is inserted in this number.

JOHN THOMPSON (WHOLESALE DRUGGISTS, 1921), LTD., 27-35 Duke Street, Liverpool, have issued a new price-list of patent medicines, proprietary articles, packed goods, etc. It is bound in blue cloth and provided with a cutout index on the edge, which facilitates reference.

Thos. Christy & Co., 4 to 12 Old Swan Lane, Upper Thames Street, London, E.C.4, have been appointed by the British Central Africa Co., Ltd., sole distributors to chemists for the company's "Empire" cigarettes and tobacco. Samples and quotations will be sent on request.

SALTRATES. Ltd., Euston Buildings, George Street. London, N.W.1, referring to our report of the Chemists' Exhibition, state that the natural classification of their exhibits should have been under "Drugs, Chemicals and Pharmaceuticals," and not "Toilet Preparations and Requisites."



#### Professor Armstrong,

in his address to the Society of Chemical Industry at Cambridge, gave incidentally, and perhaps without meaning to do so, a very good reason why the title "chemist" should not be surrendered to those "professional chemists" who are demanding it from us. Outside the ranks of pharmacy the word has "as wide a meaning as the term 'engineer.'" Anybody who cares to do so may style himself an agricultural or an industrial chemist; no legal qualification is required, and there is no guarantee that the title is in any sense deserved. The only "qualified" chemists, in fact, are the chemist and druggist and the pharmaceutical chemist. The Professor urged upon his hearers the necessity of a similar qualification for "all who practise chemistry, either as consultants, analysts, teachers, or in any other public capacity," but he omitted to say that we who are the only legally recognised chemists are already qualified, or to note the injustice of depriving us of the title which we alone of "all who practise chemistry" have done our best to deserve by insisting on qualification as a preliminary step to its assumption. The Professor, indeed, simply

#### Ignored Us.

For an illustration of the proper restriction of titles to those who have legitimately earned them he cited the terms "solicitor" and "accountant." That we are of no account whatever in his eyes is clear from what he said next, that those he was addressing cannot "at present even lay claim to a monopoly in the application of the term 'chemist,' "though he did not "despair of educating the public on this point." I will not call this a studied insult, for it is something worse. It is also inexpressibly foolish. It iemores not only the fact of our existence, but the further fact that before these men can obtain a monopoly of the title they want they must destroy the monopoly that is already ours, and one hardly sees how this is to be effected by any education of the public. Ours by legal enactment and by universal public consent the title already is, and we are not going to give it up. Attempts to cajole us into doing so have failed; the idea that we shall let it go by default is absard. If anything could strengthen our resolve to retain it, Professor Armstrong's attitude would do so.

#### The Debate

in the House of Commons on the medicine-stamp duty showed a strange ignorance on the part of our legislators, including at least one legal luminary, with regard to the subject under consideration. Even after Sir William Joynson-Hicks's explanation of the scope of this tax Mr. Short argued as if tabloids, merely as such, are liable to the duty. Scarcely less strange was Sir William Joynson-Hicks's own classification of patent medicines as luxuries, and if the defence of the tax depends upon this classification it is a desperately weak one. Medicines, whether efficacious or not, are not luxuries, nor does the concealment of their composition or the putting of a threepenny stamp on them make them such. It was admitted that "some" of these patents are very useful, and it might easily be shown that their place could not be filled in any equally convenient way; the contention of Mr. Williams that this tax is a tax upon the health of the people is therefore to some extent true.

#### The Law

affecting disinfectants for the prevention of venereal disease badly needs altering, and the alterations suggested by the Ministry of Health's Committee will, no doubt, be generally approved. But it is difficult to reconcile some parts of the Committee's report with what Mr. Chamberlain said in the House of Commons of the existing law. According to him, chemists may already sell such disinfectants if they are not accompanied by

written or printed recommendations (docs this include a prohibition to recommend that they should be used in a certain way or at a certain time?); according to the report the law needs altering "so as to permit" such sale. Again, in view of the fact that the report recommends the prohibition of the advertisement of disinfectants, one is driven to ask whether Mr. Chamberlain meant that disinfectants may be recommended in print or writing provided the recommendation does not accompany the sale of them, and a philosophically-minded man might ask further what practical difference there is between a written or printed and a verbal recommendation; but this, perhaps, is to consider too curiously. It is evident, however, that the sale of these things by chemists is beset by dangers of a legal no less than of a moral kind; and most of us will, I fancy, have as little to do with them as possible.

#### "You Chemists,"

said a lady to me yesterday, "are a queer set of people." I had on two occasions within a fortight commissioned her to get me two drachms of a certain drug, not often sold by retail, in two different towns. There was nothing to choose between the towns or the status of the firms from which she procured the drug, yet she was charged exactly double at the one shop what she had paid at the other. Naturally, she wanted to know on what principle chemists' charges are made, and I must confess I could not tell her. I can't say at the moment whether this drug appears on any of the various retail price lists current in the trade, but I have little doubt that it is in most if not all of them. But apparently we are a long way yet from that uniformity of price which is professedly our ideal.

#### The United Ancient Order of Druids

have been denouncing the present panel system as a mockery, a delusion, and a snare; and, if half the statements made on the eccasion were true, not without reason. Probably, however, a good deal less than half is true; but admitting that there is any substantial substratum of truth in the charges of carelessness, neglect and inefficiency, there is sufficient case for inquiry. The attack was entirely upon the doctors, for though the quality of the medicines supplied was, among other things, complained of, it was clearly implied that the reference thereto was to the prescribe. There is ground for satisfaction on our part in the fact thus made evident that between the Order of Druids, at any rate, and the doctors there is no collusion in an attempt to deprive us of our share of Insurance work. This attack on the doctors should indeed strengthen our position; for if there is any justification for these charges of failure to realise their responsibilities as medical attendants, it would be absurd to entrust them with the duty of dispensing as well.

#### Aqua Mirabilis,

about which a correspondent inquired last week, is a very old preparation, for which there are many formulas in the older dispensatories and "receipt books." The extemporaneous form you give is not very much like that of our first London Pharmacopæia, which, Englished, is as follows: Take of cloves, galanga, cubebs, mace, cardamoms, nutmegs, ginger, of each one drachm, juice of celandine half a pound, spirit of wine one pound, white wine three pounds; infuse them twenty-four hours and draw off two pounds with an alembic. This famous cordial was, however, probably made most frequently from private recipes by the Dame Marjories of olden times in their own still-rooms. There are many references to it in old plays and novels.

Manioc, the root from which tapica and arrowroot are prepared, is to be used in France to eke out the supplies of flour for bread.—"Daily Express."

They are a remedy

against fever and colds, and worth 75 centimes a kilo," is the exhortation on the title-line of the "Matin" of June 10.

#### THE HOUSE OF **HOBBS**



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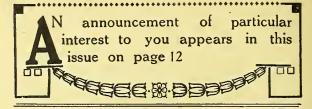
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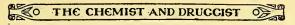
Dept. 44CK, Harpic Manufacturing Co., Staple Street, London, S.E.I.



# Editorial Articles

#### The Special Issue

THIS number of THE CHEMIST AND DRUGGIST, the Annual Epecial Issue, affords us an opportunity of placing before our subscribers illustrated articles on matters of drugtrade interest which cannot for technical reasons be dealt with in the ordinary issues. We have tried again to surpass previous attainments, and we leave it to our readers to judge whether we have made a new "record." We do not think so many pictures have ever been given before in a single issue of any drug-trade journal. The chief theme of the literary matter is the forthcoming twelfth International Congress of Pharmacy and Diamond Jubilee British Pharmaceutical Conference. The two functions are to be combined to form a pharmaceutical week, beginning July 23, and are to be held in London. The last occasion when the International Congress (the fifth) met in London, in 1881, was an unqualified success, and there is every reason to believe that this year will rival the last century's effort. To assist chemists to appreciate the significance of the Congress, the history is traced from the beginning, much of the information given being from original sources. We do not think, for example, that the dramatic story of the origin of the Congress has been dealt with before in English literature. The fact that the members of the British Pharmaceutical Congress and the International Congress of Pharmacy are to make a whole-day visit to Oxford has further suggested the article. on Oxford. Here are presented those features of the most celebrated University city of the Empire especially interesting to chemists. The article guides visitors to the beauty spots and historical associations of Oxford. The well-known tower of Magdalen College has been used as an adornment for the outside of this issue. Printed in six colours, the cover equals any previous effort we have made in this direction. We also "feature" the London botanical gardens, not only because these have a particular association with the training and business of chemists and druggists, but also on account of the fact that a garden party for Conference visitors will be held in the Royal Botanical Gardens. The article will be a reminder to many that London has unrivalled botanical resources, and students who are following the instructive series of lessons on "Pharmaceutical Botany" will not fail to notice the emphasis laid upon the facilities for botanical study afforded by the Gardens. An unusual feature of a trade journal is the number of aerial photographs which we print in this number. This class of photography is novel, and a great improvement from an illustrative point on the old idea of bird's-eye views. We have taken the opportunity also of describing in some detail the production of THE CHEMIST AND DRUG-. GIST. Much of the information has never been published before, and we think that the readers of the most important drug-trade journal in the world will all be interested in the glimpse that is given when a corner of the mystery curtain is lifted. Hitherto unpublished information is given regarding Sir Thomas Browne, the author of



"Religio Medici," as a prescriber. As we assume that our subscribers will scan-every page of this issue with more than ordinary care, we need not continue the catalogue of contents. It may be noted, however, that on the first page we have printed a summary of the contents, a useful feature to the busy man which will in future be a regular part of each issue, as it was before the war. The publisher has introduced several novelties into the advertisement pages. We note particularly sections printed on tinted art papers. The insets are still of the high standard for which Special Issues of our journal have long been noted. In glancing through the pages of advertisements we are particularly struck with the advance that has been made in the art of typographical display and with the attractive manner in which our advertisers place their wares before the drug-Those who know the difficulties which have to be surmounted by business houses at the present time will appreciate the more the efforts that have been made to provide advertisements that are both interesting and profitable to the reader. But as "progress is the law of life," it is unnecessary to dilate further on the improvements and advances that are reflected on all sides. If this number gives our readers as much pleasure to peruse as it has given us to prepare we shall be amply rewarded.

#### A Chemical Attaché

The appointment of commercial attachés to the staff of diplomatic missions marked the official recognition of the part played by trade in international relations. The highly specialised nature of modern commerce and industry, with their manifold ramifications, insistently demands an even more adequate representation abroad of certain vital branches of enterprise, and our democratic age is likely at no distant date to witness the advent of industrial, even scientific, attachés to the personnel of embassies and legations, destined, perhaps, in time, to take the place of the more decorative representatives of each nation's armed forces. America has taken the first step in this direction, and it is significant and illustrative of the leading rôle played by chemistry to-day that this branch of knowledge—and of industry—should be deemed most in need of individual diplomatic representation. This decision, which was foreshadowed in these columns (C. & D., May 26, p. 735), finds its practical application in the appointment by the United States Department of Commerce of Dr. F. E. Breithut as Chemical Trade Commissioner to Germany and other European Countries. The Department justifies this appointment by stating that the American chemical industry is facing a critical stage of its development, and it is imperative that the country should be advised of the significant developments in Germany and in other countries. Dr. Breithut will be attached to the staff of the U.S. commercial attaché in Berlin, but is also entrusted with the task of studying the chemical industry in England, France and elsewhere in Europe where there have been developments of interest to the United States.

#### French Vanillin Consumption

The popularity of vanilla as a flavouring agent, and the very limited amount of natural product available compared with the demand, are apparent in the following statistical data: In the French budget of 1920 a new tax of 100 francs per kilogram was introduced on synthetic vanillin, to be levied when the product left the works. The levying of this tax has made it possible to establish the amount of vanillin actually consumed in France, which prior to the war was estimated at about 30,000 kilos, annually. From the returns now available it appears that in 1921 France manufactured 10,581 kilos 270 grams of synthetic vanillin, from which the treasury derived a revenue of 1,058,100 francs. In this connection it is pointed out that although France, through her colonies, is the largest source of supply of vanilla, the yearly production amounts at the outside to 60,000

kilograms of pods, whereas the above quantity of synthetic vanillin is equivalent to no less than 500,000 kilograms of vanilla pods, assumed to contain on an average 2 per cent. of vanillin. This comparison aptly illustrates how the synthetic product has succeeded in supplementing the inadequate supply of natural vanilla. In addition to the above amount actually consumed in France, in 1920 3,300, in 1921 800, and in 1922 100 kilograms of vanillin were imported, while exports increased from 1.900 kilos in 1920 to 10,400 in 1921, and to no less than 24,300 kilos in 1922, in consequence of the increased output by French manufacturers, in the face of German and American competition.

#### Dutch East Indian lodine

IODINE, in the form of sodium iodide, occurs in the water of several springs in the Dutch East Indies, particularly in the volcanic districts, and in the residencies of Soerabaya, Samarang and Cheribon. Already at an early date steps were taken to utilise these natural waters as a source of iodine, and the first production of iodine on a com-mercial scale in the Dutch Indies dates back to 1854. In former years it was exported chiefly in the form of copper iodide, containing 50 per cent. of iodine, but recently the production of pure iodine, and also of iodides, has been taken up. The progress realised by this local industry is apparent from the fact that whereas in 1892 only 2,110 kilograms of copper iodide was produced, the output increased to no less than 57,900 kilograms in 1913. During the years 1918 and 1919 production ceased owing to the stoppage of the supply of chemicals required in manufacture, but was resumed in 1920, in which year the output totalled 14,965 kilograms of copper iodide, and 585 kilograms of other iodine compounds. The four principal iedine factories are: Exploitatie Maatschappij Kesamben; Exploitatie Maatschappij Malang; Vereenigde Jodium-fabrieken, and the Ned. Indische Maatschappij voor Chemische Producten, all in Soerabaya. During the year 1922, 25,431 kilograms of iodine was exported from Soerabaya, of which 14,400 kilograms was shipped to Great Britain, 7,891 kilograms to Holland, 2,540 kilograms to Germany, and 600 kilograms to China. In addition to these consignments of iodine, 46,286 kilograms of copper iodide and potassium iodide was exported, Great Britain figuring as the chief purchaser.

#### · Smuggling Drugs

SMUGGLING is by no means an extinct profession, and apart from the illicit introduction of "dangerous" drugs, or of alcoholic beverages into "dry" countries, it has gained a fresh lease of life since the Armistice. The depreciation of the German currency has proved a mighty incentive to speculators of the get-richy has proved a mighty to those individuals known on the Continent as "wanglers" (Schieber), and medicines, especially well-known trademarked synthetic products, have during the past years been smuggled out of Germany, i.e., exported without a licence, in enormous quantities. In many cases it has been found that the supposed original packages were fraudulent imitations and the contents have on analysis proved to be grossly adulterated, greatly to the chagrin of the foreign wholesaler or pharmacist who thought he had done a good stroke of business. To protect their foreign customers some reputable German firms have gone so far as to issue distinct labels for various countries. At the same time several foreign governments have frequently issued warnings against purchasing medicinal preparations from strangers, or have drawn attention to the sale in the country of adulterated branded products, since these extensive adulterations have created a state of affairs presenting grave perils to the health of the community, on a scale scarcely appreciated by those not affected by these practices. To combat more effectively this growing evil, twelve of the leading Danish, Norwegian and Swedish wholesale drug houses have formed an association, under the title "Nordens Droge Union," whereby the members undertake not to purchase any trade-marked or patented pharmaceutical preparations except from the actual manufacturers or their accredited representatives, and also to do all in their power to suppress the illicit trade in these products.

### Recent Patents

Abstracts of specifications of recently-granted patents for inventions. The complete specification (is. each including postage) of British patents can be obtained from the Patent Office, 25 Southampton Buildings, London, W.C.2, on quoting the name of the patentee and the number of the patent.

#### GERMAN

Metallic Beryllium.—A process for obtaining metallic beryllium in a compact form, based on the electrolysis at 1,200° to 1,300° of a molten mixture of sodiumberyllium fluoride and barium-beryllium fluoride. (A. Stock and H. Goldschmidt, D.R.P. 375,824.)

Chlorophyll Derivative. - A process designed to approximate chlorophyll more closely to hæmoglobin in order to use the resulting product for therapeutic purposes. Pure chlorophyll is treated with oxalic acid and alcohol to extract the magnesium present, the residue, which consists of pure phæophytin in alcoholic solution, is mixed with an ethereal-alcoholic solution of ferric acetate, the iron taking the place of the magnesium in the chlorophylle molecule. (S. Matysiak. D.R.P. 376,287.)

Anhydrous Glycerin.-A process consisting in saponifying linseed oil with a concentrated solution of sodium hydroxide, whereupon the pressure in the boiler is reduced to about 10 mm. and the water extracted from the mixture at a temperature of 80° to 100° C. The resulting dry mass is ground to a very fine powder and extracted for one hour with dry acetone, whereupon the acctone is removed, leaving as a residue pure anhydrous glycerin. The glycerin-free soap obtained simultaneously by this process forms a white dry powder, which can be pressed into cakes or used as such. (L. Schmidt. D.R.P. 376,643.)

Preparation of Menthol.—A process designed to transform pulegone, and various oils of mint "poley" oils), into products possessing the properties of menthol or of natural peppermint oil. Examples: 1,000 grams of "poley" oil (Spanish mint oil) is dissolved in 5,000 grams of ether, a small layer of water is added, and the whole could by itee where years and the standard process. whole cooled by ice, whereupon 800 to 1,000 grams of metallic sodium is gradually added. The aqueous layer is drawn off, and the ether removed by distillation, where-upon the peppermint oil thus obtained is rectified in vacuo or in a current of steam. Pulegone treated by this process yields a lævogyrate menthol. (H. Müller. D.R.P. 376,474.)

Stable Diamino-dioxyarsenobenzol Derivatives.—Solutions of 4.4' dioxy-3.3'-diaminoarsenobenzol rapidly decompose, whereby their toxicity increases and the spirocheticidal power diminishes. It has been found that a new stable compound, which does not decompose in aqueous solution or on exposure to the air, is obtained by the interaction of the formaldehyde-sulphoxylate compound of dioxydiaminoarsenobenzol and the silversodium compound of the base; this may be effected either by mixing the aqueous solutions of each together, or by mixing the powdered compounds and dissolving the mixture in water. (Farbwerke vorm. Meister Lucius & Brüning. D.R.P. 375,717.)

## **Business Changes**

THE Charles H. Phillips Chemical Co. has been transferred to The Proprietaries Agencies, Ltd., 179-181 Acton Vale, London, W.3.

MR. WESLEY C. PEEK, chemist and druggist, has taken over the business at 79 St. James's Street, Brighton, lately carried on by Mr. Hancock.

MR. J. HUTCHEON, chemist and druggist, late manager of Boots, Ltd., Young's Corner, Chiswick, London, W., has bought the business of the late Mr. J. P. C. Sholl, chemist and druggist, 77 Vicarage Road, Watford.

Mr. J. Lancaster, chemist and druggist, 89 Skinner Lane, Leeds, has purchased the business of A. E. Anderson, Ltd., 281 Lower Wortley Road, in the same city. This business will be carried on under the style of J. Lancaster & Son, chemists.

### Westminster Wisdom

By the " C. and D." Parliamentary Representative

#### Herb-beer Duty

Mr. Potts asked the Chancellor of the Exchequer, on June 25, whether the reduction from 4d. to 2d. per gallon in the duty levied on mineral waters applies to table waters brewed from herbs?

Sir W. Joynson-Hicks replied that the duty on herb beer was reduced from 4d. to 2d. per gallon in 1916, and that rate is still in force.

## SALE OF FOREIGN HONEY

The following is the clause referring to the sale of imported honey which is to be moved in Committee on the Merchandise Marks Bill:—

Any person who shall sell, or offer or expose for sale, or have in his possession for the purpose of sale, any imported honey whether blended with other honey or not shall, unless the article is contained in a jar or other package which is conspicuously branded or labelled so as to indicate that the article is imported honey or a blend of imported honey with other honey here will be a possession of the proper beginning the same of the proper beginning the same of the proper beginning the property of the p other honey, be guilty of an offence against this Act.

#### VENEREAL DISEASE

Lieut.-Col. Fremantle asked the Minister of Health. on June 20, if he has considered the report of Lord Trevethin's Committee on Venereal Disease, and what

action he proposes to take thereon.

Mr. Chamberlain, in reply, referred to a previous reply to the member for the Barnstaple Division (Mr.

Sir W. Davison: Has any notification been given to chemists, on the lines of this report, that they are entitled to sell these disinfectants, or will further legis-

lation be necessary in the matter?

Mr. Chamberlain: No notification has been issued to the chemists in consequence of this report; as to whether legislation will be required, that is a question into which I am now inquiring.

Coming Events

This section is reserved for advance notices of meetings or other events. These should be received by Wednesday of the week before the meetings, etc., occur.

#### Tuesday, July 3

Glasgow Pharmacy Club. Visit to Duncan, Flockhart and Co.'s Herb Farm at Warriston, Edinburgh. Train from Queen Street Station at 2 p.m. Tickets (4s. each) from the

Wednesday, July 4

Pharmaceutical Society of Great Britain. 16 Bloomsbury Square, W.C., at 11 a.m. Counc'l meeting.

Birmingham Pharmaceutical Association. Annual excursion. Train for Stratford-on-Avon leaves Snow Hill at 2.7 p.m. High tea at River Restaurant. Tickets (7s. each, or, omitting rail journey, 4s. each) from secretary.

Manchester Pharmaceutical Association. Annual picnic at Dove-dale. Special saloon leaves London Road Station, at 1.20 p.m. for Thorpe Cloud. High tea at Peveril of the Peak Hotel. Tickets (11s. 6d. each) from the secretaries or members of Council.

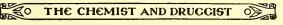
Thames Valley Pharmacists' Association. Annual excursion.
Steam launch leaves Kingston for Chertsey at 2.30 p.m.,
returning about 9. Tea on arrival. Tickets (6s. each) from
Mr. A. W. Poole, 84 Sheen Road, Richmond.

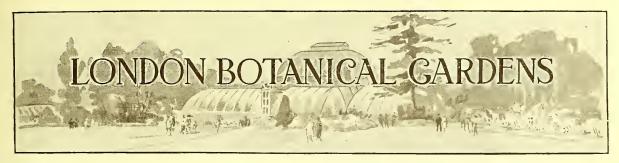
#### Thursday, July 5

Pharmaceutical Society of Great Britain (North Metropolitan Branch), Connaught Rooms, Great Queen Street London, W.C., at 7.30 p.m. Annual meeting. Social Reunion and dance afterwards. Members free; Non-members 5s. each. Tickets from Mr. H. Skinner, before July 2.

PROPRIETARY ARTICLES TRADE ASSOCIATION. The annual meeting of members will be held on July 12 at the Holborn Restaurant (Caledonian Room), at 3 p.m., when the Annual Report will be submitted.

CERTIFICATES OF ORIGIN FOR GREECE.—The Greek government has issued an order to all the customs houses whereby in future goods chargeable at the rates established in the preferential tariff, based on commercial agreements, will have to be accompanied by a certificate of origin.





THE facilities in and around London for the study of botanical science are unequalled throughout the world both in number of plant specimens, living or dead, and convenience of access thereto. The great Kew herbarium is the central court of reference on all questions of plant identity. London's museums have taken toll for nearly a century from the economic produce of the British Empire and from a worldwide entrepot trade passing through its docks and warehouses. The diversity of specimens are as overwhelming as they are unique, so that one's brain is apt to become bemused by extent of variety and wealth of detail.

It is our purpose to show that England's Metropolis is equally favoured in regard to living plants cultivated in its botanical gardens and parks or growing under natural conditions on surrounding commons and in woods. Rapid means of transport provide opportunities for seeing, in due season, under ideal conditions, a wider range of plant life than is possible elsewhere without considerable effort and extended

travels.

#### NATURE'S GARDENS AND NATURE STUDY

The green spaces and avenues of trees in London are a source of surprise to the visitor who expects nothing but bricks and mortar. It is possible to walk through the "heart" of London, from the West End (Kensington) to the City (Blackfriars), almost entirely through parks and public gardens. Great expanses of public property stretch in green array for miles to the confines of Greater London (North: Regent's Park, Primrose Hill, Hampstead Heath; South West:

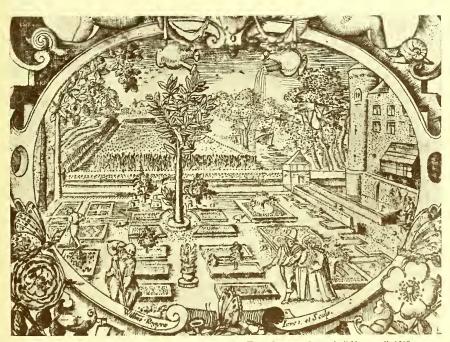
Battersea Park, Wandsworth Common, Wimbledon Common, Richmond Park). Greater London itself is surrounded by rural beauty spots within one hour's journey from its centre. The garden county of Kent, the glorious gorse heaths and pine woods of Surrey vie with the woodland heights of Middlesex, Essex, and Hertfordshire in presenting verdant and floral pictures with the changing seasons that impress the memory with their unending variety and charm. When spring ends the dull days of winter each week bring new joys to an ever-increasing number of Londoners every year, who are learning to distinguish the season of the year by its floral tributes. Floral Sundays, originating in Chestnut Sunday, are becoming definite institutions.

The first primroses usher in pilgrimages on foot, or journey by train, motor, or cycle, to their woodland haunts. Daffodil Sunday indicates the day to visit the "Wilderness" at Hampton Court. Bluebell Sunday (at Kew) and Chestnut Sunday (at Bushey Park) are other days on which multitudes foregather to enjoy vistas of colour and grandeur which ample space permits without overcrowding. Lilac, rhododendron, and azaleas are grown nowadays in massed formation in public and private gardens, the many horticultural varieties providing pleasing colour effects and combinations. Acres of landscape in London's environs are at times coloured by gorse, poppy, mustard, or willow-herb. Autumn with its glowing tints ever recall the glories of the famous Burnham Beeches. Health and pleasure await upon these visitors to the floral beauties of the countryside, but real knowledge

of its botanical treasures is sadly lacking, though young and

old alike are obsessed by a veritable passion for gathering London school childflowers. ren, for the last decade, have had a weekly lesson in nature study (with plant specimens) without showing the least evidence of genuine interest in botany. Knowledge (of memory) without understanding cannot evoke interest and enthusiasm in any subject, and it would seem as if the teaching of nature subjects has been above the heads of the scholars. Since the end of the Great War the energies of London school. masters have been diverted to associating nature study with gardening, including actual practice. Nature study requires patience and application which the newer generation may accord to applied botany or gardening. The Londoner is fond of pottering around in his little plot, and a little knowledge will invest the humdrum round of digging, planting and manuring with an interest that will rob them of their tedium.

A humble gardener of Chelsea, Philip Miller (see pp. 922-4), became the greatest botanist of his age because of his ability to impart his knowledge far



A 16th Century London Physick Garden, from the Title Page of Gerard's "Herball," 1597

In several respects this engraving corresponds with Gerard's own garden in Holborn, between Ely Place and the Fleet River, in which he cultivated nearly 1,100 species of plents, native and exotic. He issued a catalogue of the garden in 1596



PHILIP MILLER, A CHELSEA GARDENER
From an engraving by C. F. Maillet, 1787. Miller was appointed Gardener at
Chelsea in 1722, and published its first catalogue in 1730

and wide in simple language. The way is clear for another reawakening of public interest when expounding the whys and wherefores of growth and variation replaces pedantic descriptive botany of to-day with its interminable terminology.



WILLIAM CURTIS, PRAEFECTUS HORTI

From an engraving by F. Sansom. Curtis was Demonstrator of Plants at the Chelsea Garden from 1773. His "Lectures on Botany," published in 1805, were delivered in the Garden

THE BEGINNINGS OF BOTANY AND BOTANICAL GARDENS

In olden times the medicine man was a herbalist who combined the practice of medicine and economic botany. A few diligent observers raised themselves to a status of master physicians and compounders. Hippocrates, Dioscorides, Galen, and Avicenna were in reality keen students of materia medica, who possessed the faculty of classifying knowledge and imparting it to others. Their methods and formulæ provided the first examples of standardisation in medicine, which captured both popular and professional opinion. The estimation of the writings of Galen and Avicenna increased during some six centuries of dogma and delusion until physicians in England, France and Germany accepted their medicines with a slavish deference, only possible by long burial of all critical faculties. This unquestioning obedience to the written word persisted well into the sixteenth century until men began to think for themselves. Likewise the fathers of Botany (Brunfels, 1495–1554; Bock,



SIR HANS SLOANE, CHELSEA'S GREATEST BENEFACTOR Engraved by J. Faber, after the painting by Sir Geo. Kneller, 1716

1498-1554; and Fuchs, 1501-1566—see C. & D. June 24 1922, p. 169) filled pages with interminable discussions of whether a Greek or Latin name given by Pliny or Dioscorides was intended to indicate this or that plant. Bock certainly at times lost patience and declared in favour of laying aside all disputes concerning philology and nomenclature of old plant names.

The first real botanists were Charles de l'Ecluse (or Clusius,

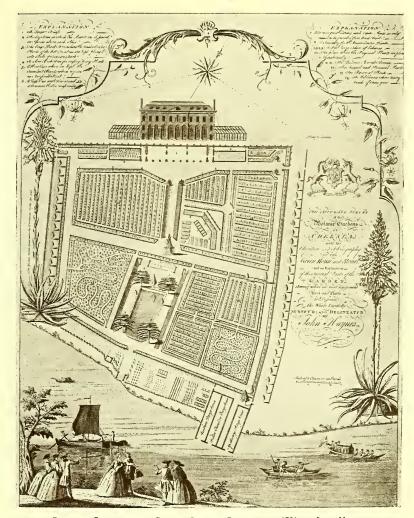
The first real botanists were Charles de l'Ecluse (or Clusius, Belgium, 1526–1609) and John Gerarde (England, 1545–1612), who not only described and drew every flowering plant they knew, but cultivated them in their own gardens, even journeying to foreign lands to obtain exotic plants. Travel was a matter of grave trouble and great expense in those times. Though history leaves no record we can imagine Gerarde, in Holborn, plying his practice of medicine, growing his own simples in his beloved garden, and supplying the gentry with horticultural noveltics, all with the object of finding means for extending his travels. The preface to Gerarde's own "Herball" (1597) affords an idea of the measure of success achieved. This is by George Baker, one of "his Maiesties chiefe Chirurgions in ordinaire," who states:

"And if I may speake without partialitie of the author of this booke, for his great paines, his no lesse expences in trauelling far and neere (for the attaining of his skill) was neuer contented with the knowledge of those simples which

grow in these parts, but vpon his proper cost and charges hath had out of al parts of the world all the rare simples which by any meanes he could attaine vnto, not onely to haue them brought, but hath procured by his excellent knowledge to haue them growing in his garden, which as the time of the yeare doth serue may be seen: for there shall you see all manner of strange trees, herbes, rootes, plants, flowers, and other such rare things, that it would make a man woonder, how one of his degree, not hauing the purse of a number, could euer accomplish the same."

Gerarde himself, like true botanists of all times, is surprised and pained at the prevailing neglect of nature study. The dedication of his book to "The Right Honorable, His singular good Lord & Master, Sir William Cecill Knight, Baron of Burghley," is as follows:

"But my very good Lord, that which sometime was the studie of great Philosophers and mightie Princes, is now ineglected, except it be of some few, whose spirit and wisdome hath carried them among other partes of wisdome and counsell, to a care and studie of speciall herbes, both for the furnishing of their gardens, and the furtherance of their knowledge: among whome I may iustly affirme and publish your Honor to be one, being my selfe one of your seruants, and a long time witnesse thereof: for vnder your Lordship. I haue serued, and that way imployed my principall studie, and almost all my time now by the space of twenty yeeres. To the large and singular furniture of his noble Hand, I haue added from forren places all the varieties of herbes and flowers that I might any way obtaine, I haue laboured with the soile to make it fit for the plants, and with the plants to make them to delight in the soile, so that they might liue and prosper under our climate, as in their natiue and proper countrie: what my successe hath beene, and what my furniture is, I leaue to the report of them that haue seene your Lordships gardens, and the little plot of my speciall care and husbandrie."



PLAN AND SURVEY OF THE CHELSEA GARDENS, PUBLISHED IN 1751 BY JOHN HAYNES

A second edition, published in 1753, was associated with the Director of the Garden, Isaac Rand. Note on the left hand side the great "Aloe Africana," in the centre the four cedars of Lebanon, and at the bottom right hand corner of the Garden the "Apothecary's Barge house"



THE CHELSEA GARDEN FROM THE RIVER IN 1878

From Field and Semple's "Memoirs of the Botanic Garden at Chelsea." The view shows the garden entrance before the Chelsea Embankment was built, with the two cedars of Lebanon then remaining

BOTANY AND THE PURITY OF DRUGS

Thus we see that in England the study of medicinal properties of plants and of botany were inextricably mixed. William Turner, often described as the first English botanist, posed as an authority on that variable conglomerate confection of his time. Writing in 1568 on the properties and virtues of the "Great Triacle" (with mode of prepara-tion), he adds, "Wherefore if there be any apothecaries in London that dare take in hande to make these noble compositions, they may know where to haue them." The fashion then, as always, was to belaud the foreign product, but apothecaries in those days were not afraid of inveighing against unfair com-Thus Hugh Morgan, the petition. Queen's apothecary, published a pamphlet in 1585, stating that his product is better commended than that from Venice and Constantinople, and complains:

It is very lamentable to consider that straungers doe dayly send into England a false and naughty kinde of Mithridatium and Threacle in great barrelles more than a thousande weight in a year, and utter ye same at a lowe price for 3d. and 4d. a pound, to ye great hurt of her maiesties subjects and no small gaine to straungers purses.

That the accusation is not unwarranted is shown by the Master and Wardens of the Grocers' Company recording in 1612 that a "filthy and unwholesome baggage composition" was being brought into this Realm as Tryacle of Genoa "made only of the rotten garble and refuse outcast of all kinds of spices and drugs, hand over head with a little filthy molasses and tarre to worke it up withal." This resulted in the College of Physicians prescribing "a proper formula" of which the preparation was entrusted to one, William Besse, apothecary in the Poultry, who agreed not to charge more than 2s. 8d. per lb.

The desire to ensure purity of ingredients was the basis of the descriptions in the early Herbals of Gerarde and Parkinson. Gerarde made certain by growing his own simples. The illustration on p. 919, from his "Herball," illustrates with little doubt the arrangement of his garden in Holborn. The centres of the drug and spice trade in Bucklersbury and the Chepe were supplied with herbs from the surrounding market gardens, and by herb gatherers further afield. The "herborising" expeditions initiated by Thomas Johnson, of Snow Hill (the author, in 1633, of an enlarged edition of Gerarde's "Herball"), were to instruct apprentices how to identify the herbes they handled in medicine. Johnson was not afraid to air his strong opinions on the necessity for field botany. The following extract from the "Epistle" to the "Reader" which prefaced his edition of Gerarde's work is doubly interesting in that it names his companion apothecaries who travelled far in their expeditions even to Wales (Anglesey).

Thomas Hickes
John Buggs
William Broad
Job Weale
Leonard Buckner
James Clarke
Robert Lorkin

"Mr. George Bowles of Chisselhurst, in Kent, must not here be forgot, for by his trauells and industry I haue had knowledge of diuers plants, which were not thought nor formerly knowne to grow wilde in this kingdome, as you shall finde by diuers places in this book. My louing friends and fellow Trauellers in this study, and of the same profession, whose companie I haue formerly enioyed in searching ouer a great part of Kent, and who are still ready to do the like in other places, are here also to be remembred, and that the rather, because this Knowledge amongst vs in this city was almost lost, or at least too much neglected, especially by those to whom it did chiefely belong, and who ought to be ashamed of ignorance, especially in a thing so absolutely necessarie to their profession. They should indeed know them as workmen do their tooles, that is readily to cal them by their names, know where to fetch, and whence to procure the best of each kinde; and lastly, how to handle them."

Johnson was an original member of the Apothecaries' Society, founded in 1617 with the object of improving the quality of drugs and the qualifications of vendors thereof. His influence on botanical studies is evident from the fact that "herborising" expeditions were, with some lapses, included in the Society programme for 200 years (1633–1834). It is evident Johnson's faction was the initiator of the Society's support of botanical science, which culminated in establishing a garden modelled on that of Gerarde.

#### THE FIRST LONDON BOTANICAL GARDEN

The Chelsea Physic Garden was almost the first and remains the oldest Botanical Garden in London. Economic as well as educational factors contributed to its institution in 1673. The Apothecaries' Society first of all required a barge house in order to participate with other public companies in the Lord Mayor's Show of those days, which was held on the River Thames itself. Furthermore, a laboratory for the preparation of drugs had just been erected (1671) to sell drugs, etc., to apothecaries, and part of the four acres of land acquired from Charles Cheyne at a rental of £5 per annum was used for providing medicinal herbs to the laboratory. It is recorded that the gardens in 1678 furnished a good crop of herbs for use in the laboratory. The Society apparently already had an interest in an existing garden at Westminster, as plants were transferred therefrom to Chelsea. Lastly, it was desired to cultivate exotic plants from seeds sent

from foreign lands, so that the Society's students could then see growing plants instead of examining dried specimens or book illustrations.

THE HISTORY OF THE CHELSEA PHYSIC GARDEN

records alternately progress and fame and decay and threatened abandonment. Within a few years of its inception the Garden had become a great expense, plants being stolen and higher wages demanded. Private subscriptions built a high wall around it (1674) and restocked the Garden. The first "stove" or hothouse erected in England was also built in 1681, so that Evelyn, the diarist, could write on April 7, 1685:

I went to see Mr. Wats, keeper of the Apothecaries' Garden of simples at Chelsea, where there is a collection of innumerable varieties of that sort; particularly besides many rare annuals the cinchona tree bearing Jesuit's bark, which has done such wonders in Quartan Agues—what was very ingenious was the subterranean heate, conveyed by a stove under the conservatory, which was all vaulted with brick so as he has the doores and windowes open in the hardest frosts, secluding only the snow."

Four young cedars of Lebanon were planted in 1683, which afterwards became famous landmarks. Nevertheless, troublous times led to proposals for abandoning the Garden in 1693, which were staved off by the personal efforts of the apothecary botanists. The solution of the Society's difficulties came in 1722 through a former pupil, Sir Hans Sloane, a dilettante naturalist who married well, and bought the Manor of Chelsea in 1712 (p. 920). He also became a fashionable physician. In 1714 a deputation of members conferred with Sir Hans Sloane on the affairs of the Garden. Ultimately the latter transferred the property to the Society in 1722 on a yearly payment of £5, apparently never enforced. The deed shows the object of the Physic Garden to prevent unintentional adulteration. It also contains conditions which became of vital importance as regards its continuation.

"To the end that the said garden might at all times thereafter be continued as a physick garden, and for the better encouraging and enabling the said Society to support the charge thereof, for the manifestation of the power, wisdom, and glory of God in the works of the creation, and that their apprentices and others might better distinguish good and useful plants from those that bore resemblance to them and yet were hurtful, and other the like good purposes."

Non fulfilment of conditions by the Society of Apothecaries to empower Sir Hans Sloane or his heirs to offer garden on same conditions to the Royal Society, or failing this, to the Royal College of Physicians, or in default of latter undertaking maintenance, the property to revert to original owners.

The supply of plants for laboratory purposes was to cease, so that garden became an educational centre, pure and simple.

The supply of plants for laboratory purposes was to cease, so that garden became an educational centre, pure and simple. The existence of the Garden to-day is due to the foresight of the donor, as heavy expenses tempted the Society on more than one occasion to lay down a burden which was offered to and refused by both the Royal Society (1753 and 1860) and the Royal College of Physicians (in 1860). Finally, in 1893, the Charity Commissioners accepted the trust of maintaining the Garden. It was the danger of land reverting to heirs that led to public protest and a Treasury inquiry, with this happy result.

It must not be thought that the Society of Apothecaries were indifferent to their obligations. Time and time again the members subscribed freely to pay for the cost of new improvements and extensive alterations. Progress and decline alternate as the energy and enthusiasm of a new gardener diminishes with advancing age.

#### THE PHYSIC GARDEN BECOMES FAMOUS

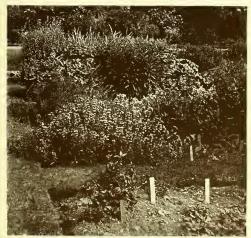
Philip Miller (whose portrait is shown on p. 920) became gardener in 1722, the Apothecaries dismissing the old gardener in taking over their new property. Miller was both able and energetic. He succeeded in getting built two hothouses and a greenhouse (at a cost of £1,800, a surprisingly heavy bill met entirely by private subscription). Two years after his appointment Miller published his "Gardener's Dictionary." It spread the fame of Chelsea throughout the world, and remained the standard book on gardening for almost a century.

Linnæus, who visited the Chelsea Physic Garden in 1736 and could only converse with the gardener Miller in Latin, said of the book: "Non erit Lexicon Hortulanorum, sed etiam Botanicorum [it is a dictionary not only of horticulture, but of botany]."

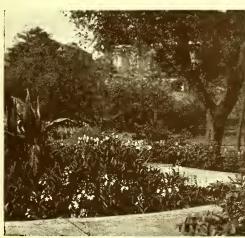




A VIEW IN THE CHELSEA GARDEN, SHOWING THE STATUE OF SIR HANS SLOANE



THE NATURAL ORDER BED



BOG BEAN IN FLOWER IN A STONE BASIN



MEDICINAL RHUBARB, WITH THE LABORATORY IN THE BACKGROUND

THE PHYSIC GARDEN AT CHELSEA BELONGING TO THE SOCIETY OF APOTHECARIES Photos by H. N. King



A STATE OF THE STA

KEW A FEW YEARS AFTER ITS ESTABLISHMENT: AN ENGRAVING OF 1763, SHOWING THE PAGODA From "Plans and Perspective Views of the Gardens at Kew," by William Chambers, Architect to the Princess

by William Chambers, Architect to the Princess Dowager of Wales

Miller, who had no medical training, roused the ire of the new demonstrator in Botany (Isaac Rand, apothecary and F.R.S., appointed 1724) by publishing a catalogue of plants in the Garden (Catologus Plantarum Officinalum que in Horto Chelseiano aluntur, London, 1730). This listed 405 herbs and bushes and 94 shrubs and trees. Although in Latin, the English name of each plant was given. Rand retaliated by issuing the same year a similar list in Latin only, but indicating also part of plant used in medicine.

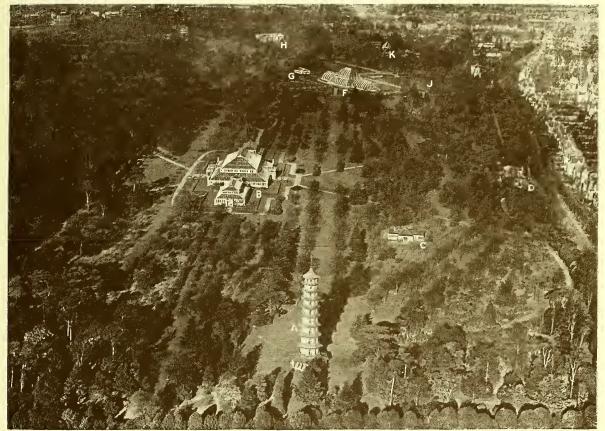
The Garden Committee in 1751 praises Miller for "his great diligence in settling a correspondence and procuring seeds or plants from various parts of the World." According to

Pulteney in his "Sketches," "it was the remark of foreigners that Chelsea exhibited the treasures of both the Indies." The arrangement of the Gardens in 1751 (p. 921) represents it in the hey-day of its fame.

The Garden illustrated in the arrangements of its herbaceous beds the development of plant classification from the divisions into herbs and shrubs of Ray and Tournefort (as above) to the modern system of Natural Orders. Chelsea was a stronghold for sixty years (from a bout 1760) of the sexual system of Linnæus until Lindley introduced his and De Candolles natural system in 1838. The present plan of classification adopted in the Natural Order beds is that of Bentham and Hooker (1900).



AN EIGHTEENTH CENTURY VIEW OF KEW, SHOWING THE PALACE AND THE LAKE From an engraving by Wm. Elliott, after Wm. Wollett



Photo]

The Royal Botanic Gardens, Kew, Seen From an Aeroplane

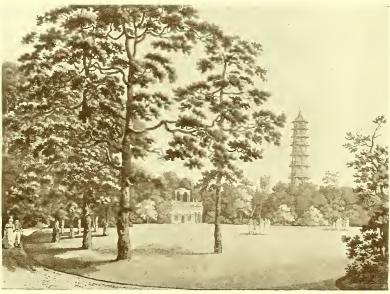
The buildings, etc., seen in this photograph are as follow: A, Pagoda; B, Temperate House; C, Refreshment Pavilion; D, Marianne North Gallery; F, Palm House; G, Water-Lily House; H, No. III. Museum (Orangery); J, Pond; K, Cactus House.

The duties of the Demonstrator of Botany were defined in detail when William Curtis (founder of the Botanical Magazine), an apothecary of Gracechurch Street, was appointed Demonstrator and *Præfectus Horti* in 1773. These included superintendence of library and garden, encouraging study of

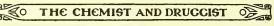
botany among the Society's students, demonstration at least once a month, from April to September, of plants, especially in the "officinal" quarter, with their names and uses, to arrange "herborising" expeditions and prepare annu-ually a specified number of herbarium specimens, and to cultivate an extensive botanical correspondence, both at home and abroad. The botanical excursions included an annual herborising expedition to the hills or seaside, extending over at least two days. This was preparatory to the Society's "General Herborising "meeting, to which distinguished guests were invited. It was followed by a dinner at the expense of the stewards for the year. Other day excursions were made around London. It was in 1829 that the Society admitted all medical students free, once a week, on recom-mendation of their teachers, so that the garden should be "more useful to the profession at large than it had hitherto been."

#### PRESENT DAY PHYSIC GARDEN

The Physic Garden at Chelsea has during its long existence retained its original features. Henry Hyde, the Second Earl of Clarendon, wrote on May 17, 1689, "I was for above two hours at the Apothecaries' Garden at Chelsea, where I was not disturbed by any company." This is true today. Gardeners and students go quietly about their tasks, and the high walls add to the effect of seclusion and retire-



THE KEW ALHAMBRA AND PAGODA IN THE DAYS OF GEORGE III. From an engraving by H. Schultz, published by Ackermann, 1798





WILLIAM AITON, FIRST CURATOR OF KEW
From a mezzotint by T. Lupton. Aiton was appointed, in 1759, to establish a Physic Garden at Kew for the Princess Augusta, Dowager Princess of Wales

ment. It is not our purpose to give lists of plants grown, these should be seen for themselves. Then the reader will find the rhizome of white hellebore somewhat wrinkled, when dry is attached to an erect stem of leaves of surprising grace and freshness of appearance. The medicinal rhubarbs will be found to grow leaves three feet square and twelve-foot

flowering stems. All the medicinal plants of the Minor Syllabus, from the male fern to the ubiquitous dandelion, have their place. Admission is by ticket, which conserves the garden to the use for which it is intended. The curator of to-day, Mr. William Hales, like his predecessors, is ever willing to assist students with instruction from his store of botanical knowledge and lcre. Specimens are provided when suffi-ciency of plants permit, and it is this last feature which makes Chelsea the most useful of all London gardens to students. The famous Cedars of Lebanon have all disappeared, two being cut down in 1771, another dying in 1878, and one surviving until 1903. In former days great trouble was taken to grow such trees as storax in the open air, but occasional inclemency of weather or London smoke makes the task too difficult to ensure permanency of plants, nevertheless the sheltered character of the garden permits many tender exotic trees to flourish therein in the open, so that they attain a size and character more in keeping with their natural habitat.

#### ECONOMIC BOTANY BEGINS AT CHELSEA AND IN KEW

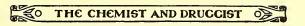
An unpaid debt to the Society of Apothecaries is the foundation of economic botany. The commencement of the history of its Physic Garden coincides with the issue (in 1693) of the first rational text book on materia. This was the Pharmacologia of Samuel Dale, Apothecary, Braintree. It was William Curtis (see portrait), an apothecary in Gracechurch Street, and Demonstrator at Chelsea from 1773 to 1777, who began in 1777, in his "Flora Londinensis," showing plants beautifully drawn to life in colours. This flora proved too costly to be continued; but similar remarkable coloured drawings from living plants were the feature of the "Botanical Magazine," or "Flower Garden Displayed," which was started by Curtis in 1787. This was "...a work in which Botany and Gardening (so far as relates to the culture of ornamental plants), or the labour of Linneus and Miller, might happily be continued." Curtis added, he would not confine himself to the plants described by these "luminaries," but said he would "occasionally introduce new ones, as they may flower in his own garden or those of the curious in any part of Great Britain." Since 1787 over 8,000 plates have been published during the long continued existence of the "Botanical Magazine." Many of these relate

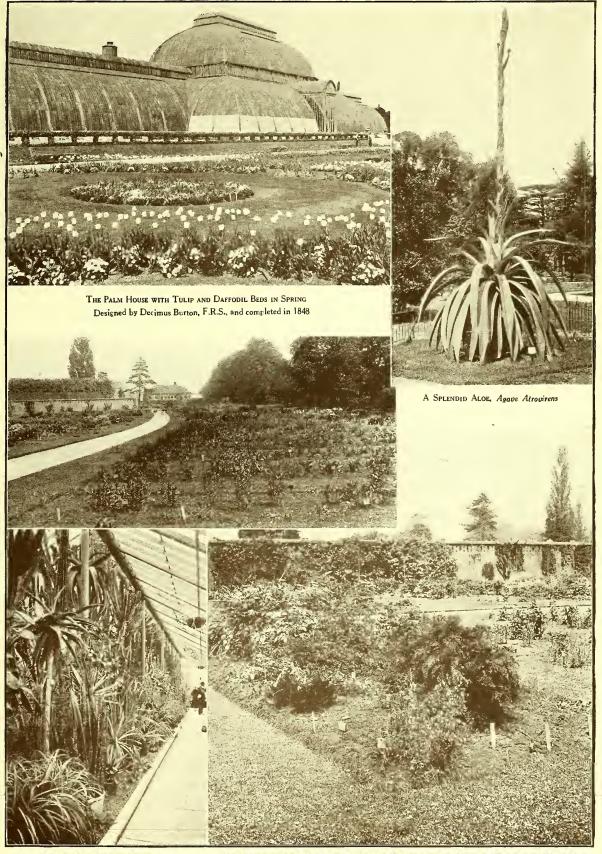


SIR JOSEPH BANKS.
Engraved by H. Robinson, after T Lawrence



SIR WILLIAM HOOKER From an etching by Mrs. D. Turner, after J. S. Cotman





A PEEP IN THE CACTUS HOUSE

THE UMBELLIFER BED IN THE HERBACEOUS GROUND; ABOVE, GENERAL VIEW OF THE GROUND

to foreign medicinal plants, such as aloe, coea, hamamelis, star-anise, jaborandi, quillaia, and sarsaparilla. Curtis's medical knowledge naturally made him give due prominence to useful exotic plants. Economic botany at Chelsea reached its zenith during the period in which John Lindley was (the Society's last) Professor of Botany (from 1835–1853) and Thomas Moore (1848–1889) its last Curator. When Lindley departed (to save expense) the garden began to decay. The "Treasury of Botany," by Lindley and Moore, reflected their activities at Chelsea, and it remains to-day a standard reference work on economic plant products, and is a classic noted for its compressed descriptions of plants and their uses. Nathaniel Bagshaw Ward, who became Master of the Apothecaries' Society in 1854, made valiant efforts to create new interest in the Society's garden, but this languished after his death in 1868. Ward, however, did greater service

(bad) conditions of the Royal Botanic Gardens, Kew, by a committee, of which Lindley was the leading spirit:

A national garden ought to be the centre around which all minor establishments of the same nature should be arranged. They should all act in concert with it, and through it with one another, reporting constantly their proceedings, explaining their wants, receiving their supplies, and aiding the Mother Country in everything that is useful in the vegetable kingdom. Medicine, commerce, agriculture, horticulture, and many valuable branches of manufacture would derive much benefit from the adoption of such a system. From a garden of this kind, Government would be able to obtain authentic and official information in points connected with the founding of new Colonies; it would afford the plants there required without it being necessary, as now, to apply to the officers of private establishments for advice and assistance.



Photo]

THE LAKE IN KEW GARDENS: AN EXAMPLE OF ITS WILDER BEAUTIES

[H. N. King

in making possible plantations for cultivation of conomic products. He issued, in 1842, a 95-page book entitled "On the Growth of Plants in Closely Glazed Cases.," which, in the fourth ehapter, deals with "the conveyance of plants and seeds on ship-board." These "Wardian" cases are still in use for transmission of living plants across oceans. Robert Fortune, ex-Curator of the Chelsea Physic Garden in 1848, proved the utility of Wardian cases by introducing 20,000 tea plants into India for the East India Company. Plantations of cinchona, tea, coffce, and rubber, so important in modern medicinal, commerce, and industry, are a consequence of Ward's invention.

It will be seen later that Kew, in its earliest stages as a botanic garden, derived much of its material from Chelsea. Therefrom, also through Lindley, came its inspiration as botanic centre of the British Empire. The genesis of Kew's work in relation to economic botany is embodied in the following recommendations from a report, in 1838, on the

The project against which Lindley protested was to abolish Kew as a scientific institution and transform it into a kitchen garden and fruit garden for use of the Royal Family. It was the interest in the cultivation of economic plants that led to popular support, resulting in the institution of a national garden. The gardens were opened to the public in 1841, when Sir William Hooker (who first made known Ward's invention) became Director. The gardens then consisted of 15 acres of grounds with botanical collections of plants with a scattered number of old greenhouses. To-day the area devoted to horticulture and arboriculture is 228 acres. It has fulfilled the ideals of its sponsors, and become the botanical centre of the British Empire, as well as a popular public resort. A nation's purse has been able to withstand an expense which crippled Chelsea, and has built up a garden worthy of the greatest Empire in the world's history. It is fitting that the authorities at Kew recognise Chelsea as still fulfilling amply its original purpose. A students' garden formerly existed at Kew on the site of the present Kew Herbarium. This has not been replaced, the reason given being that the "Chelsea Physic Garden" suffices for this purpose.

#### KEW GARDENS

The Royal Botanic Gardens, Kew, resulted from the union of two demesnes famous horticulturally long before association with scientific botany. These were the grounds attached to Richmond Lodge (or Palace) in the old Deer Park of Richmond, and Kew House, a dwelling near the present Kew Palace. On the death of George II., in 1760, both properties devolved to his grandson, George III. An old bridle-path known as "Love Lane," which divided them, was not closed until 1802, when Parliamentary sanction was obtained. Queen Caroline, wife of George II., spent large sums in converting the grounds of Richmond Palace into pleasure grounds, but all ornamental buildings and other signs of her occupation disappeared during the reign of George III. The gardens of Kew House grew the "choicest fruit in England," according to John Evelyn (Diary, August, 1678), who also (1688) "went to Kew to visit Sir Henry Capel's, whose orangery and myrtetum are most perfectly kept." About 1730 Frederick, Prince of Wales, leased Kew House from the Capel family, but it was his widow, the Dowager



Photo]

INTERIOR VIEW OF THE KEW HERBARIUM

(E. J. Walis

Princess Augusta, who laid the foundations of Kew Gardens of to-day, when in 1759 she appointed William Aiton, a former pupil of Philip Miller, of Chelsea, as head gardener, to establish a Physic Garden. Lord Bute superintended the laying out of some nine acres of the grounds, part of which was devolved to herbaceous plants in the (then) newly-devised Linnean system of classification. The cultivation of exotic plants was also vigorously pursued, the Princess-Dowager exchanging plants with Stanesby Alchorne, unpaid demonstrator of plants at Chelsea, who presented it with new trees. Collectors were also sent out, the first (Francis Masson) going to the "Cape." A number of temples and buildings were erected by Sir William Chambers, of Somerset House, of which several, including the Pagoda, still form conspicuous features at Kew (see aerial photograph). the death of the Dowager Princess, in 1772, her successor, George III., appointed Sir Joseph Banks as unofficial director (unpaid) of both Botanic Gardens, of which the management was entrusted to Aiton. Under Banks' influence the activity of collectors abroad gradually made the gardens be regarded as the botanical headquarters and research centre for the Colonies. George III, and Banks both died in 1820, and the activities at Kew declined until John Lindley created public interest in 1838 by his strong comments upon the condition



[E. J. Wallis

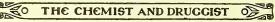
THE MARIANNE NORTH GALLERY OF BOTANICAL PAINTINGS AT KEW This Gallery contains a large number of splendid paintings, made by the late Miss North during her very extensive journeys in all parts of the world. It is open daily, but owing to a clause in the deed of gift no specimen of these interesting and valuable paintings can be reproduced

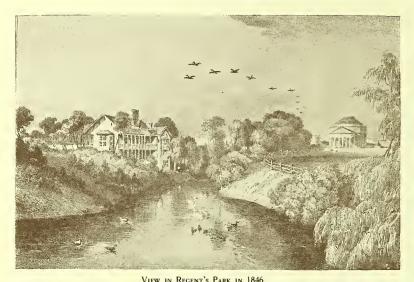
of affairs at Kew. Lord Surrey, then in control, completed the arousal of public indignation by a project to convert the hot-houses into vineries (etc.). Between the completion of the report by Lindley's committee (see above) and its presentation to Parliament he offered the plants therein to the Royal Horticultural Society and the Royal Botanical Society (who refused them). A consequent result was the transference on March 11, 1840, of "the charge of the Botanical Gardens and all other gardens" at Kew, "except the Kitchen Gardens," to the Commissioners of Woods and Forests.

The second great era of progress at Kew began with the appointment of Sir William Hooker, then Professor of Botany at Glasgow University, as Director in 1841. Extensions added 43 acres of the adjoining pleasure grounds in 1843, and the whole of these in two years later. The latter addition was "laid out primarily as an arboretum for the cultivation of every tree and shrub which will withstand the open air in this climate." The Palm House was built in the years 1844 to 1848. It was designed by Decimus Burton, F.R.S., who also made the drawings for the fine gates at the main entrance to the gardens. A museum of economic botany (now Museum II.), the first of its kind, was opened in 1848. In 1846 the botanical beds of plants classified in natural orders



LOOKING FROM THE ROCK GARDEN INTO THE HERBACEOUS GROUND





A scene near the Lake, showing the Canal and an archery pavilion. From a lithograph by T. M. Baynes

were established on their present site. The giant water-lily (Victoria Regia) of South American tropics flowered for the first time in 1850, and a house was specially built for it (completed 1852), this led, in 1853, to the gardens being opened to the public on Sundays also. The lake, which is a feature of the landscape, was excavated between 1857 and 1861. The Queen's Cottage and Gardens were made public property in 1897 by Queen Victoria, who desired they should remain as natural and little disturbed as possible.

It is curious that though Kew is the home of systematic botany, the arrangement of plants therein is made almost solely with a view to individual and collective beauty and interest. Practical considerations has influenced subdivisions of plant types, so that specialists find what they wish to see growing closely together. Exigencies of landscape garden, arboriculture, and forestry demand separation

of shrubs and trees from the herbaceous members of the same natural order, thus Ray's classification is represented in a way at Kew to-day. Only in the herb garden, with plants arranged in formal beds, according to natural affinities, is there no pretence at artistic effect. Everywhere, however, plants are arranged to facilitate comparison with others of the different varities or species. Similar requirements of heat and moisture, nutrition naturally collects together plants into associations of types, such as marshwater plants, which aids our ideas on eulogy or study of plant associations.

A general impression of the arrangement of the garden, starting from the main entrance, is that of gradual transition from the splendours of the Tropics to the simple beauty of rural England; near the gates the plants in hot-houses requiring excessive heat or moisture (aroids, filmy ferns) to others requiring less artificial heat (orchids, ferns, economic plants, or dry conditions (succulents). Outdoors there are horticultural varieties cultivated for floral effects. Proceeding further afield, the glasshouses grow cooler

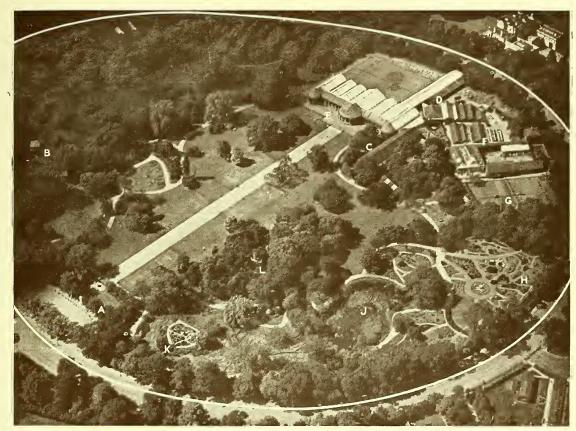
as we reach the palm house and temperature house. The lake is more natural, though many of its lovely plants are "tender" as regards winter's frosts. The vistas of trees begin with the nut trees (hazel, hickory), and lead to hardy elm and oak on one side and giant pines on the other. Finally, the garden ends in the rural retreat around the Queen's Cottage, which is a piece of perfectly natural wood-land near the heart of London. The Cottage Garden is kept as an old-fashioned flowergarden. Aconite, bearberry, belladonna, gentian, rosemary, saffron, southernwood, are medicinal plants on the central lawn.

Thus there is a wilder and hardier character as the main entrance recedes in the distance. Reservations must be made, as winter flowering plants, such as Forsythia, are scattered around. Gorse flowers are more likely to be "double," and heaths more purple than normal. Lawns



Before the Establishment of Regent's Park or the Botanical Gardens Wellin's Farm from a watercolour drawing in the British Museum, made by J. White in 1789. The farm occupied the site of the central part of the present Regent's Park





Photo]

ROYAL BOTANIC GARDENS, REGENT'S PARK, SEEN FROM THE AIR.

[Central Aerophoto Co., Ltd.

The white oval line includes practically all the Gardens. The letter references are:—A, Main Entrance; B, Museum and Library; C, Fellows Rooms; D, Victoria Regia House and Greenhouses; E, Conservatory; F, Students' Houses and Practical Gardening School; G, Kitchen Garden; H, Order Beds and Meteorological Instruments; J, Lake; K, Rock Garden and Sundial; L, Tower and Sun Recorder

herbs, shrubs and trees attain perfection of condition, and shape only possible under cultural conditions. Despite attention, some plants (such as monkey puzzle) will not grow as well as desired. Others, such as sequoia, are small, being a youngster 100 years or so old, against the 1,500 or so of its full-sized ancestor in America. It is not our purpose to give lists of plants, the visitor can buy cheaply maps and guides to suit his tastes. The label tells the name of the plant, and it remains for him to learn the lessons therefrom.

Wherever one goes knowledge can be combined with interest and pleasure. The herbaceous grounds contain over 7,000 species. One bed will contain but few varieties with strikingly different flowers; another, many with inflorescences so alike that it is difficult to see any difference between them. Progress in evolutionary development is being made in the latter order; it has passed, and left only a remnant of diverse types in the former instance. Relics of bygone ages can be seen. The maidenhair tree (Gingko biloba) would now be extinct if the Chinese had not saved it by cultivation. Tree ferns and Cycads in the Palm House recall the Coal ages when they were dominant. Compare their clumsy-built-up stems to the straight stems of the prines. The latter, with its cambium ring, has solved the problem of secondary growth.

Little and often is a prescription to prevent mental indigestion in botany. Small variations are easy to follow. Thus the varied colours of lilac flowers are due to differences in amount of colour developed in cell sap of petals. The famous Reumpenheim Lilac, which takes the form of a small tree, differs from other lilacs in not producing suckers—hence its clean bole. Observation followed by a little thought will teach much. The humid, hot atmosphere of the aroid house should be associated with luxuriant growths therein. Contrast the dry atmosphere and slow growth of

the succulents—therein lies the importance of water in plant life. The orchid house is moist and warm, but their aerial (epiphytic) habit necessitates absorption of moisture from air, so plant leaves are again arranged to conserve water (xerophytic). Insectivorous plants grow in hot, warm atmosphere, but in boggy substratum poor in nitrogen, hence apparatus to catch flies, etc., to secure nitrogenous food.

Outdoors pure floriculture is seen in the rose garden, Italian garden, azalea garden, and rhododendron dell. The water-lily pond and tank for aquatics provide transitions to the more scientific botany of the herbaceous garden, the bamboo garden, hardy fernery, wild gardens, and seashore plantation.

The collections of trees and shrubs comprising the arboretum now consists of between 4,000 and 5,000 species and varieties. The arrangement of trees in the pinetum is typical of thought taken at Kew, the New World conifers being arranged on one side of the walk, and the Old World pines, etc., on the other. Ease of comparison is thus assured. The lengthy pine needles and huge cones of *Pinus Coulteri* impress one's memory all the more when seen against the much smaller leaves and fructifications of European pines.

#### THE ROYAL BOTANIC SOCIETY'S GARDENS

The gardens of the Royal Botanic Society in Regent's Park are one of London's most popular institutions, being well-known as a centre for garden fétes and exhibitions, particularly in connection with charity. It occupies the whole of the Inner Circle of Regent's Park, an area of nearly twenty acres. It's central situation, attractive arrangement of herbaceous beds, and an interesting collection of exotic economic plants make this Botanic Garden particularly attractive to medical and pharmaceutical students when



Photo] A NATURAL ORDER BED AT REGENT'S PARK Ranunculaceæ, including an aconite

H. N. King

examinations loom ahead. It is here that the British Pharmaceutical Conference and International Congress of Pharmacy are holding a garden party on July 25, The park itself was opened in 1812, but the central area, once a farm (page 930), was left so as to erect thereon a Royal palace. It was, however occupied by Jenkin's

Nursery and Pleasure Grounds in 1838. The Royal Botanic Society took over this land in 1839 when it obtained its charter "for the promotion of botany in all its branches, and its application to medicine, arts, and manufactures, and also for the formation of extensive botanical ornamental gardens within the immediate vicinity of the Metropolis." Criginally the surface consisted of a flat expanse of London clay, and it was from this unpromising material that this beautiful and varied example of landscape gardening seen in the aerial photograph was evolved. Material excavated to form a lake form the mounds between the lake and the central walk.

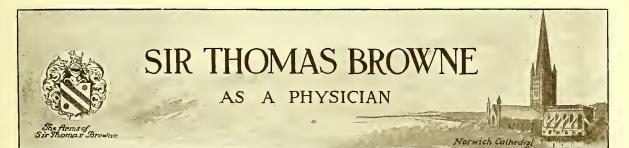
The Herbaceous Garden is laid out on original lines. The beds are of different sizes and shapes. Each one accommo dates a single Natural Order, so that an idea of the importance of each order is given by relative number of species contained in its order bed. The Economic Houses (built in 1873 and rebuilt in 1904) contain quite a representative collection of plants used in medicine. The whole gardens are a Kew in miniature. Aloes, areca, cinchona, and cinnamon are typical of plants found in the economic house. The Victoria House contains warm tanks exhibiting the ever-popular Victoria Regia with its huge floating leaves and the "sacred lotus." Banana, sugar cane, and many varieties of tropical plants and climbers therein are ever "novelties" to many of its visitors. There are, just as at Kew, houses for orchids, succulents, ferns, and bedding plants. The rock garden and kitchen garden are especially useful in connection with the school of practical gardening established in 1897, which is doing good work, the curriculum extending over three years. Experiments in genetics (heredity) are conducted, under the direction of Professor Ruggles Gates, on ground set apart for the purpose. When the visitor is tired of looking at plants, there is usually tennis to watch on several hard tennis courts, which have been laid down, and which are a source of considerable income.

A Government Committee, in 1919, made recommendations, including (1) the Institution of a School of Economic Botany; (2) an Institute of Research, especially on the living plant; (3) a centre for teaching in horticulture, and (4) courses in school gardeningf or teachers. This scheme involves an initial outlay of £5,000 and an annual expenditure of £3,000 in salaries and expenses.

Students are admitted to the gardens by special orders, issued for three months, on the recommendation of a Fellow of the Royal Botanic Society.



SAXIFRAGE IN THE NATURAL ORDER BEDS AT REGENT'S PARK



F Sir Thomas Browne as a stylist in English prosc enough has been said, for a generation or two at least, by all who have any claim to be heard on the subjectand by some who have none. The curious thing is that his renown as an author has almost entirely overshadowed his distinction as a physician and, in a lesser degree, his claims to remembrance as an antiquary. It is true that he has not conferred his name in perpetuity on a liniment or a dinner pill; but to do that appears to be one of the functions of the fashionable physician, and Browne had not enough of the

showman in his composition to become a fashionable

physician.
The biographical facts of his career are few and unimportant. He took his degrees at Oxford, travelled on the Continent, and eventually settled in Norwich, then one of the chief cities in England, where says the preface to an edition of some of his works published in 1712, "he was much resorted to for his admirable Skill in Physic." His knighthood reached him when he was sixty-five years of age, through the accidental circumstance of a royal visit to his city; to have declined it would, one infers, have caused an embarrassing situation. Before this, however, his fame was secure "Religio Medici" had been translated into several languages, and his opinion was being sought in many walks of learning. The catalogue of the sale of his library (which was probably added to after his death by his eldest son, Dr. Edward Browne, afterwards President of the Royal College of Physicians of London),

ran to fifty-eight closely printed pages; and the section "Libri Medici, Philosophici, etc." comprised 96 lots in folio, 133 in quarto, 144 in octavo, and 69 in duodecimo or smaller.

The numerous prescriptions occurring in Sir Thomas's letters to his son Edward-now happily preserved for the nation in the Sloane collection at the British Museum-date from his latter years, when the son had graduated as a bachelor of medicine and had set up in practice in London. The reduced facsimiles appearing as illustrations in this article might, at first sight, be taken for specimens from our "Prescription Problem" column, and suggest that the apothecaries who dispensed Sir Thomas's "bills" (as prescriptions were then called) must have been caligraphic experts. One letter of earlier date (the original of which is in the Bodleian) is of interest as a record of a physician's treatment of the Plague of 1666. Sir Thomas writes to J. Hobart, a kinsman by marriage:-

Worthy and Honord Sir,

I am extremely troubled to heare that some haue had the sicknesse in your howse . . . . in order to preuention you may please to use two fumes, one of vinegar, wherein rue, angelica, wormwood, scordium, juniper, bay leaves, and savin are steeped, wch may bee vsed often in the day, and in the chambers. Another of an higher and stronger nature . you may haue, if you please to send to Mr. Dey, the apothecarie, where you may also have a preuentive, and also an antidotall electuary of no meane nature, whereof give a dragme and half in posset drinck unto any that is falling sick,

and to bee in bed, and agayne the next night, and so agayne the third night, and to drink possets of scordium, wood sorrel, and angelica.

Another example of prescribing at a distance is afforded by the following:-

To Mr. Jenkinson of Ham burg

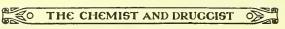
February 22, Worthy Sr 1669. I humbly thanke you for your courteous respects. . . . I have knowne the use of naturall baths to doe much herein and an issue in the necke, and he may please to make use of these medicines contained in the bill inclosed which may be sent to an Apothecary whereby you shall receive first ingredients all which I desire to be boyled in seven gallons and half of woort such as your beere is made of usually unto six gallons, then to have the liquor streyned, then to worke it up with yest and tunne it hanging in the bung 2 fresh Orenge pills, and after it is 8 dayes old to drinke thereof as of common beere at, and out of mcales, onely mixing it with playne beere at meales if he pleaseth . . . it may be very good for him to weare a plaster to

the small of his back made out of this Roll which is praescribed in the note, & to be renewed when one falleth of 12 monthes. . . . All the powder praescribed may be steeped in a quart of sack, and so keepe it by you for three dayes, then strayne it and keepe it by you and take twelve spoonfuls thereof . . . and if you finde it too weake then steepe the same quantity in Brandy wine and take 5 or 6 spoonfulls thereof. . . . .

It is clear from the Brownian correspondence as a wholea good selection is given in Wilkin's "Life"—that the young Dr. Browne relied to a great extent on the accumulated learning and experience of his father. Writing from London on October 3, 1682, for instance, he tells Sir Thomas that as a hospital physician he has to give not less than 6,000 prescriptions a year (his salary was £52 and a noble). He encloses four of the hospital recipes, and asks for comments and improvements: ". . . if you please to adde, or alter it, it shall not be made up till I hear from you, sir. . . .



THE AUTHOR OF "RELIGIO MEDICI" Engraved by J. Brown, after the painting in the Royal College of Physicians





Browne's Monument in the Church of St. Peter Mancroft, Norwich The monument, erected by his wife Dorothy, is on a pillar above Browne's grave in the chancel of St. Peter's. This grave was broken open in 1840 and the skull and hair sold by the sexton.

Presented to the Norwich Hospital Museum in 1847, the skull was recently re-buried

Pray, sir, write me word how you make your syrupus de scordio, for it is not knowne in London. Pray, sir, thinke of some good effectual cheape medicines for the hospitall; it will be a piece of charity, which will be beneficiall to the poore, hundred of years after we are all dead and gone." It also appears from the letters that Sir Thomas's patients,

for Dr Jam Bruss, in Solisbury war nece the yolder bull king Zondon

THE ADDRESS OF THE LETTER GIVEN ON OPPOSITE PAGE

when they had occasion to visit the Metropolis, were accustomed to transfer themselves to Edward for treatment. Such letters as the following are not uncommon:-

Dear Sonne July 28, 1671. You will soone understande that Mr. Shutt and Mr. Bernard are returned to London, & Mr. Bernard will come unto you and enquire concerning some directions . . . he hath for some time take driing diet drinks and pectorall medicines, first therefore may be taken Manna 3j 3vj Rhei pulveris 3ss Cremor Tartari 9j Ol. Anisi gut j, dissolved in posset drinke and then to bleede at the hæmorrhoid veines by leeches, and to make this drinke.

to make this drinke.

R Limaturæ Chalybis Zvj Infunde horis triginta in vini albi lib. iss Aq. Cichorii Melissæ Chelidoniæ ana Zij in colatura infunde Rad. Enulæ, Angelicæ, Iridis an Zj rad Eryngii Zvj Santali citrini Zij Sant rubri Ziss sem cochlearia Zj Sem fæniculi dulcis Jiij cinnamomi Ziss in colatura dissolve Syr de Erysimo de 5 radicibus de hed terrest de Corrallio ana q.s. capiat cochlearia x aut xij mane et 5 hora 4ts pomeridiana.

And so on, for nearly another folio. From this procedure

to a habit of consultation of the older physician by the younger is but a step. An undated letter reads:-

In your last there was enclosed a note from Mr. Bowes who it seemes hath been troubled with the stone in the kidney . . . he may hopefully drinke Tunbridge waters for a considerable time if they passe well, and he beareth them well, and also to trye Epsom which you may set a rate and terme unto according as you finde them to succeed and discover no contraindication. as you made them to succeed and discover no contraindication, and may a good part of the year drink of an Ale, or an hydromel or both wherein Rad Althææ Eringii Glycerizæ Lign. Nephrit, a few Baccæ Alkekengi Sem Dauci Passulæ are boyled, the birch tree hath now done running otherwise he might have made an hydromel out of the fresh liquor, which I have caused diverge to make this year. divers to make this year.

Another, dated "March 16" without the year, begins:-

I am glad to heare that Mr. Randalls sonne is in a better condition and that Epsom waters agree so well with him, the nitrosity thereof may bee beneficiall and help to fix or compose the vocability of his blood and spirits. Present my service to Madame Beck. . . .

Then follows a prescription for Madame, consisting of a decoction—dose, half a pint or three-quarters "every day every other day or 2 dayes"—twelve pills, drops, a julep, and a plaster.

The following is a rough transcription of the letter reproduced on a one-third scale on the next page: Dear Sonne

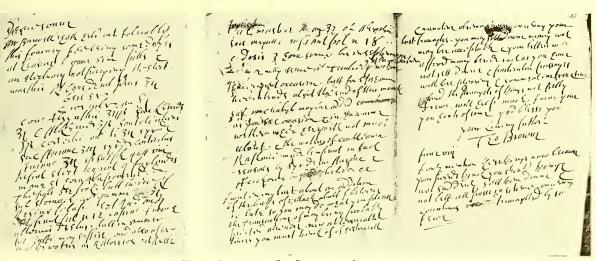
Mr. Burwell hath held out tolerably this journey. hee being some dayes at leasure I gave him pills & an electuary not purging. the elect. was this:

R Conf de vir Ficis Berber Conf sulp .. .. .. aa5j

Conf Absynthii Jiiss. suc Kermes Jj C Alkermes Jss. Santali citrini 3ss, cort citri conditi Jijsyr de suc Aurant Jij syr de corticibus Aurant Jij sp sulph gutt viij. M fiat elect capiat q juglandis mane et hora 4ta pomerid. The pills hee tooke butt twice R pil stomach. cum gummi Jj. Resina jalap. ext rud aa j. M fiant pil n 12 capiat 4 mane alternis diebus. butt in summer pil ruffi may suffice



CAST OF THE SKULL OF SIR THOMAS BROWNE In the Wellcome Historical Medical Museum. Copyright. The skull has been examined by Sir Arthur Keith and other authorities, and reported on at length concerning its craniological interest



One of a Series of Letters from Sir' Thomas Browne to his Son, Practising in London, giving him Advice on his Cases From the Sloane MSS., British Museum

and also after or at the waters as R Aloes soc pil Ruffi & mastice aa 3j ol Absynthii guttj m fiant pil n 18 dosis 3 hora somni bis in sept. . . . . sal chalyb may be added as you see occasion in warmer wether when he goeth not much about and the waters of cochlearia Raphani made compound in such seasons by syr de suc Aurant & A cichorii or chelidonei. I writ in my last about an addition of the baths of Villach butt I believe to late so you may do what you please the transactions of may being probably printed already. . . . I may give you hints of some. God blesse you.

Your Loving father THO. BROWNE. June viij.

Two letters written in 1679, when Sir Thomas was in his seventy-fourth year (he died three years later), reveal him as still an eager student. The first seeks information about some rare drugs (there was no C. & D. market report in those days) :-

Dear Sonne Mr. Alderman Wisse went this day to London. . . . By him I sent a letter, and a small box, and therein an East Indian drugge called sebets or zebets or cussum sebets. It was brought . by order from Mr. Tho. Peirce, who . . . . sayth that there was a considerable quantitie brought into England; butt not being a good commodity, it was sent back agayne; . . . he sayth they in those countries thicken broath with it, and it serveth to make gellies. I never tried it nor knowe whether it bee wholsome, for they looke a little like Ahouai Theyeti, or Indian Morris Bells, in Gerard or Johnson's herball, which are sayd to bee poysonous. I send them unto you because you being acquainted with many of the East India company, you may enquire about it and satisfie yourself as well as you can, for perhaps few knowe it, and 'tis good to knowe all kinds of druggs and simples. In the list of commodities brought over from the East Indies, 1678, I find among the druggs Tincal and Toothanage, set downe thus: 105920 Toothanage, 49610 Tincal. Enquire also what these are, and may gett a sample of them. . . .

The other asks that a recipe may be checked:-

Dear Sonne

Dear Sonne
. . . . There is a pill used in London, and I have seene it used lieere, commonly called Mathewes pill and by some Mathias his pill, the dosis is ordinarily gr. 8, about 15 years agoe one brought me a recipe thereof, R Opii Jij Sal. tartari Jss Sal Absynthii mithridatii m Jij Hellebori nigri Jij Helleb albi Jv Spicæ Ind Jij sp de Germanis Jij Sp Terebinth Jij some use sp. Junip. This is very like butt not altogether the same which is now used; therefore I desire you to take care to send the true and used receipt, though probably I shall make litle or no use thereof: 'tis an odde composition. . . . I have heard that some leave out the Hellebores, you may gett the most practised recept. The masse hath a prettie good smell, which may proceed from the Ol. Terebinth, Spica Indic. et Sp. de Germanis, some say that if the Hellebores bee left out it doth not do so well. There was a preparation call'd Sulphur Martis, and formerly I have often used it, butt for some yeares have not had it, nor knowe who prepares it. . . . . not had it, nor knowe who prepares it. . . . .

To Dr. Edward Browne, primarily, we owe the preservation of these deeply interesting records, some of which have been transcribed by him. The manuscript of Sir Thomas's considered opinion concerning "the Cortex Peruvianus" is apparently in Edward's handwriting, and although undated must have been written within relatively a few years of the introduction of cinchona into Europe:-

I am not fearfull of any bad effect from it nor have I observed any that I could clearly derive from that as a true cause; it doth not so much good as I could wish or others expect, but doth not so much good as I could wish or others expect, but I can lay no harm unto its charge, and I have knowne it taken twenty times in the course of a quartan. In such agues, especially illegitimate ones, many have died though they have taken it, but far more who have not made use of it. . . . . .

This deliverance gives point to the word portrait of Sir Thomas sketched by John Whitefoot, a contemporary, who pays tribute to "the Gravity and Sobriety of his Aspect and Conversation; so free from Loquacity, or much Talkativeness, that he was something difficult to be engaged in ary Discourse; though when he was so, it was always Singular, and never Trite or Vulgar. Parsimonious in nothing but his Time. . . . "



THE BODLEIAN PORTRAIT OF SIR THOMAS BROWNE Painted by J. Wollaston in 1734



# HOW E CHEMIST AND DRUGGIS IS PRODUCED

TE have often been asked, "What is the secret of the success of The Chemist and Druggist? " It is not so easy to answer the question as may appear at first Our own impression is that consistency of policy and hard work are the main factors concerned. Looking back, we see little of the luck that is often given as a reason for success—if it is there it is probably a consequence of policy.

#### CHEMISTS' JOURNALS

There is a temptation on such an occasion as this to deal fully with the history of drug-trade journals, but our space will only allow of an outline of this part of the subject. THE CHEMIST AND DRUGGIST was founded in 1859, but we do not claim that ours was the first journal devoted to the interests of chemists. Almost the first journal reserved for those who practise pharmacy was the "Journal de la Société des Pharmaciens de Paris," the first number of which appeared in 1797. This was followed by the "Journal de Pharmacie et de Chimie," founded in 1809, and still in existence—the oldest pharmaceutical journal in the world. In this country, the "Medical and Physical

Journal," published in 1799, and conducted by physicians, included "pharmacy" in its sub-title. There were successive journals published bearing the title "The Chemist," the first in 1824. The chemist referred to in the title was mainly the one who practises pharmaceutical chemistry, the present-day analytical chemist not having been evolved at that period. The "Journal of the Philadelphia College of Pharmacy" was first published in the United States in 1829, and continues as the "American Journal of Pharmacy," which became its title in 1835. The "Pharmaceutical Journal and Transactions" was published in London by Jacob Bell as a monthly record of the Pharmaceutical Society of Great Britain, and survives as a weekly. It was followed, in 1842, by the "Chemical Gazette," afterwards absorbed in the "Chemical News" (still "Chemical (still published weekly), of which Sir William Crookes was the editor for many years. The "Annals of Chymistry and Practical Pharmacy" was also pro-duced in 1842, but survived only for a year. This should not be confounded with the "Annals of Pharmacy and Practical Chemistry" which W. Bastick and W. Dickinson brought out in 1852 as a

counterblast to the official organ of the Pharmaceutical Society. We have also in our library files of the "Pharmaceutical Times" (1846-8) and the "Chemical Record" (1851). The last-named is of interest because of its trade report. Notwithstanding that the pathway was strewed with a discouraging number of unsuccessful endeavours, The Chemist and Druggist was founded in 1859 as a monthly journal. From the first its object was definitely the business side of pharmacy, and although now it covers every phase of the drug-trade the greatest attention is given to practical aspects. The journal became a weekly in 1886. The present volume number is xeviii., it being the enforced contraction in the number of pages during the last years of the war that prevented us passing the hundredth milestone. The Chemist and Druggist Diary, which all subscribers receive annually, was first published in 1869, but, like the parent paper, of infantile proportion compared with the present-day production. Twenty-four years ago we had an illustrated article duction. Twenty-four years ago we had an illustrated attended (C. & D., I., 1899, p. 341) descriptive of our London and Colonial offices, and a little earlier (C. & D., I., 1894, p. 111) the preparation of the Diary the preparation of the Diary set. forth.

was similarly set forth. Neither of these accounts exactly covers the ground it is proposed to traverse in the present narrative; and, in addition, a generation has grown up since the 'nineties to whom an outline of "how it is done" is likely to be of

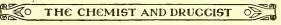
interest.



Looking out of the editorial windows then, we saw vistas of streets and traffic almost identical with those of to-day -and the article first referred to above had a companion pair of illustrations with those given here. There was the same distant view of Saint Paul's Cathedral on one side and of the beginning of Cheapside on another; opposite this office, the same church of Saint Mary Aldermanbury, in which Heminge and Condell, the immortal editors of the First Folio, lie buried; at the intersection of Cannon Street and Queen Victoria Street, the same impassive policeman dividing the waves of vehicles. The only difference of any note appears to be that hansom cabs have given place to taxis, and horsed 'buses and vans to motor-'buses and vans. with a few exceptions among the vans. Within the office, structural changes have been so slight as to be hardly



THE C. & D. HEAD OFFICES



worth referring to, and only those of our subscribers who call on us frequently and are very observant could say offhand wherein the arrangement of the various departments differs from that of a generation ago. What was written in 1899 about the first floor being sometimes mistaken for a bank is still applicable, although massive ledgers and similar clerical appurtenances tend more and more to give place to the card-index system. Those of us who remember working conditions in the late 'nineties cannot help looking back with a certain envy to their tranquillity. The dark shadow of the South African war had not yet fallen on the Empire. Queen Victoria celebrated her diamond jubilee in 1897: the Duke of Cambridge relinquished his long command of the Army in 1895; Tennyson died in 1892, Gladstone in 1898, and Huxley in 1895. Such were some of the outstanding events in a time far removed, it was fondly hoped, from wars and rumours of wars. And income-tax was eightpence in the pound.

#### VALUE OF SYSTEM

In the graver and more strenuous years that have followed, we have had abundant occasion to bless the system thought out by the founders of THE CHEMIST AND DRUGGIST and settled, as to its main features, before most of us now on the staff of the paper were born. Journalism is a blend of routine and inspiration, the exact proportions of which it is not necessary for us to determine: what is certain is that without a solid foundation of system the most brilliant inspiration would be likely to "gang agley." Let us trace the course of a postal missive from the time it reaches the office. Close to the main entrance stands the letter-room, in which a specially trained staff is in attendance half-an-hour before the rest of the day's work begins, in order to open letter packets and parcels and carry out the preliminary analysis of their contents. News items, scientific articles, display advertisements, small advertisements, subscriptions, announcements of changed addresses—these and other components of each delivery are resolved into their elements and distributed to the editor, the publisher, the sales manager, or someone else. Hundreds of letters a day reach our office, and all are eventually disposed of by the various departments concerned. We mention this partly for the benefit of the impatient type of correspondent who envisages his letter as arriving at our office in lonely state and expects a reply to a complicated question almost by return of post. Various classes of correspondence eventually travel back to the letter room, where they are docketed under a plan which ensures that the original communication can be referred to in a few seconds, if needs be. Although each day sees its budget of correspondence, the pressure visibly increases with the approach of Thursday-publishing day,



FROM THE EDITOR'S WINDOW, LOOKING EAST TOWARDS THE BANK OF ENGLAND



FROM THE EDITOR'S WINDOW, LOOKING WEST TOWARDS ST. PAUL'S

when every part of the intricate organism known as The Chemist & Druggist is "all out." Before we leave the letter room, it may be remarked that adding machines and similar mechanical aids to efficiency play their part in the scheme of things clerical.

#### THE SUBSCRIPTION DEPARTMENT

Machinery has similarly been adopted as an adjunct to the subscription department. It is not so very long since our subscribers received their weekly copy addressed with a printed adhesive label: this, in

the order of evolution, has had to give place to the style of address printed from a plate, and run off quickly from what looks something like a sewingmachine, which counts as well as addresses the wrappers. So soon as a new subscriber's name has been recorded on a card for indexing, a name plate is put in hand, and he forthwith receives his C. & D. with his name and address duly printed. The paper used for the wrappers is specially made for us, of a quality that ensures the journal reaching our subscribers intact, no matter in what part of the world our readers live. From the paper-makers the wrapper paper goes to the printers, by whom, after passing through the press, it is cut to size. The wrappers then travel to our office. where they are addressed and packed in bundles corresponding in number with postal districts, in this way assisting the post-office authorities in despatch. The bundles next receive the official "pre-paid" stamp. Then, after being filled with their indispensable contents, they are conveyed to the post office-to be exact, two post offices, one for British and one





CORNER OF OFFICE, SHOWING ONE OF THE EDITORIAL ROOMS

for Colonial and foreign copies-arriving there according to a schedule of times beginning for Great Britain at 8.30 on Thursday evenings and ending at 4.15 on Friday mornings. By means of a carefully worked-out system it is possible for the subscription department to keep up the home delivery of the weekly copies by Friday's first post without interfering with the execution of orders for the books, cards and so forth published from our office.

#### THE PUBLISHING DEPARTMENT

If an archdeacon is a man who performs archidiaconal functions, a publisher, no doubt, is first of all one who publishes; but the publisher of THE CHEMIST AND DRUGGIST is a good deal more than that. To him fall the duties and responsibilities of production in the general sense of the word; and he has to take his part in a weekly conjuring trick which results in the discovery of the number of pages available for literary as distinguished from advertising matter. Sometimes he advertises in his own pages, and occasionally he gets a mention in the editorial domain. Advertisements, as our advertisers know, are often passed on to the artist

on the C. & D. staff, whose specialised experience is always at their disposal. Publisher and editor between them keep an expert shorthand and typing staff constantly at work, and this staff helps both the departments in question out of [many a tight place when sudden pressure arises. One of the busiest sections of the publishing department is that pertaining to the Coloured Supplement, which was initiated shortly after the paper was changed from a monthly to a weekly publication. In addition to the copies which are included in The Chemist and Druggist, an increasing number of the Supplements is dispatched by post, and we have been obliged to stipulate for the provision of stamped and addressed wrappers by members of the trade who desire copies. In addition, copies are printed for counter distribution, and on Friday mornings there are many callers for

#### THE EDITORIAL DEPARTMENT

The work of the editorial department may to a large extent be taken for granted. "I suppose," said a

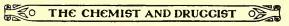
banker's clerk some years ago, quite seriously, to a journalist whose name was in "Who's Who," "that for your work you want no particular knowledge
—only taste and so forth ": and this, no doubt, is a view widely held. The problems confronting a highly technical paper like the C. & D., on the editorial side, are sui generis and of interest to journalists; but this article is not written for journalists. It may be mentioned, in passing, that no fewer than ten chemists are on the permanent staff of the C. & D., which fact we present as one of the "secrets" of the success of the paper. There are also many other chemists who contribute exclusively to the C. & D. As to the way the contents of the paper are obtained it is difficult to write except in general terms, because each week brings its own requirements. Each member of the staff is a specialist in particular subjects, and different departments are organised to deal with the various parts of the paper. The trade report section, for example, collects information as to the prices of raw drugs and manufactured products used in the trade. The C. & D. is the only drug-trade organ in this country with a department of this kind,

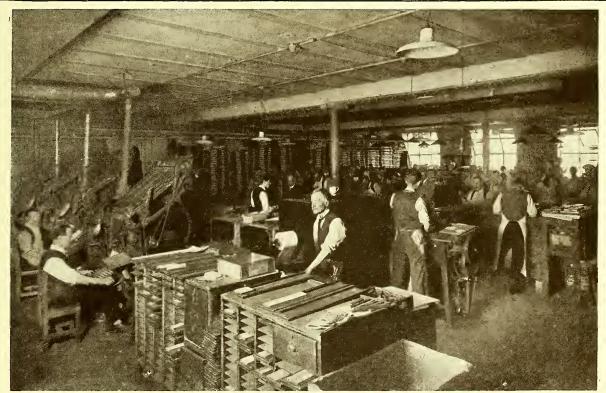
and it is this which makes the C. & D. the first-hand source for prices in the drug-trade. Correspondents in various parts of the world supply particulars of drug-crops and local drug-markets. Cables and advices are received regularly from New York (for American vegetable drugs), Smyrna (for opium), Java and Amsterdam (for cinchona and quinine), Norway and Newfoundland (for cod-liver oil), Japan (for menthol and iodine), Spain (for ergot), Italy and Germany. The staff of the C. & D. attend the sales of crude drugs in London, and the only complete report of the auctions, so essential to large users of drugs, is that published in our journal.

Other departments are devoted to home news, foreign news-we deal in the office with correspondence and publications in most modern languages—legal matters, and other features, such as the C. & D. Retail Price List, and the section devoted to the Progress of Pharmacy are dealt under definite systems. Needless to add, the organisation includes the chief reference books and publications affecting the drug-The staff have access to the chief libraries and various embassies and consulates of the Metropolis.

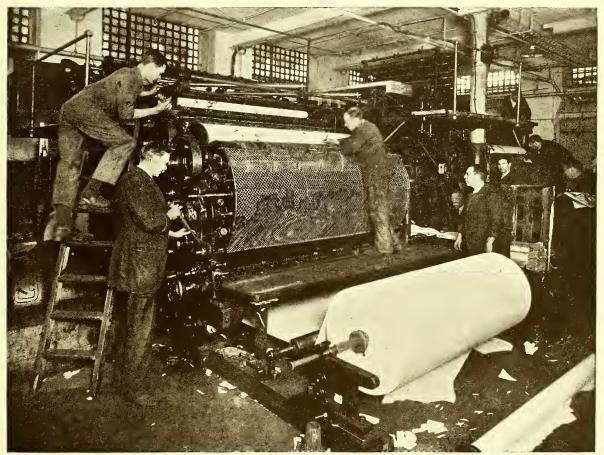


ONE OF THE TYPE-WRITING ROOMS





At the Avenue Press : the C. & D. Composing Room



THE GIANT ROTARY PRINTING THE CHEMIST AND DRUGG!ST

#### AT THE PRINTER'S

During the week the items which will form the next issue of the C. & D. are collected hourly by the printer, and by Thursday morning each section of the paper is represented by well-filled galleys of type. From the galleys proofs are taken and emendations and additions made where necessary. With the arrival of the editorial staff at the room allotted to them at the Avenue Press, one of the most fascinating games in the world begins. Proofs of the week's news, leading articles, "solid" articles and correspondence lie, in galley form, piled up on a table, together with a good deal of matter for which space could not be found in previous issues. For every pint pot available there is usually a quart "of the best" waiting for insertion; selection is swift and ruthless, many choice passages being sacrificed in the process. The fact that we have a large choice of matter for insertion in the C. & D. is one way of ensuring that each issue is up to the standard. Messengers are kept constantly flitting to and from the composing room or the readers' room—"readers," in this connection, being lynxeyed friends of the paper who look out for the thousand-

and-one transpositions or omissions that may occur where printers' type is concerned. Few people realise the trouble that is taken over details—such, for instance, as promoting uniformity of spelling. The multiplicity of technical terms, many of which have duplicated spellings, make the problem a real one in the case of the C. & D. For the guidance of the staff a bulky pamphlet has been printed, containing the C. & D. usage of hundreds of words and expressions—the "correct" way having been settled by philological and other considerations. But we are in danger of holding up our narrative. A blank set of pages for the week's issue

accompanies the galleys just referred to, and in it is noted the "make-up," a duplicate going to the composing room. The "Contents" on the front page of the literary matter are then entered up for the printers, and by this time completed pages are beginning to arrive for reading—a process which demands entire concentration. The hour has been reached when what has been written will go forth to the world in cold type, and litera scripta manet has to be borne in mind. The corrections remaining to be made at this stage are usually few in number: one or two final ones may be suggested by the chief reader, and with these settled in the affirmative or the negative the paper passes entirely into the printers' hands. As to the printing, without entering into a technical description of the process, we need only state that the most modern processes are employed. Time being the essence of the contract, rapid rotary presses are used for printing from stereotype plates, thus enabling us to save several hours at the most critical time in the production of the paper. Some idea of this stage can be gathered from the illustrations which are given here. The C. & D. figures upon thousands of breakfast tables on Friday, in consequence of these intensive activities during Thursday night.

#### Some Achievements

We may now, perhaps, refer briefly to some of the outstanding achievements which have marked the growth of the paper. In the first years of the C. & D., the long hours of business were a bitter cry, especially on the part of assistants; and we were pioneers in the early-closing movement, consistently supporting legislation reducing the length of the working day. During the agitation that preceded the passing of the Pharmacy Act of 1868, we assisted in the formation of the United Society of Chemists and Drug-

gists, which compelled the authorities of the day to respect the rights of chemists and druggists in business, and resulted in the passing of an agreed measure. A few years later, the Chemists' and Druggists' Trade Association, which came into being largely as a result of vindictive proceedings taken under the Sale of Food and Drugs Act of 1875, was warmly supported In 1893 we were instrumental in obtaining a legal decision as to the right of chemists to use the title "veterinary chemist." About the same time we showed how to develop the trade in photographic apparatus and chemicals (as, for instance, in the Diary for 1890), which trade has since become an important side-line. Similarly, we were the first in the field with practical information on radiography and biology as adjuvants to business. The C. & D. acted as sponsor to the Chemist-Opticians' Society and the Chemists' Dental Society, both of which held their preliminary meetings at 42 Cannon Street. The work of these two societies speaks for itself. In view of the present widespread interest in window-dressing, it may be recalled that we began inserting illustrated articles on the subject more than twenty years ago, and publish an authoritative book on the subject.



PART OF THE PUBLISHING DEPARTMENT

Recent events may also be summarised. When National Insurance Act first became a possibility, we collected information in various countries regarding the working of similar schemes, thus enabling the trade to avoid several pit-falls. Those who care to, can see in The Chemist & Druggist Diary, 1912, a summary of the method which was afterwards adopted for pricing Insurance prescriptions.
Other articles describing this and other methods were printed in THE CHEMIST AND DRUGGIST, May and August, 1911. With the advent of the European war the specialised knowledge of the C. & D.

staff was freely offered to, and accepted by, those in authority; and the abuse by aliens of British patent and trade-mark laws was unsparingly exposed by us, with the result that several well-known trade-marks owned by aliens were "avoided" or suspended. The extension of the British fine-chemical industry has, both before and since that time, been forcibly advocated by us. Coming to post-war times, the oppressive working of the Profiteering Act was largely mitigated for those in the trade who took advantage of our information. The C. & D., as the authority on drug-trade prices, was frequently resorted to by officials whose duty it was to carry out the Profiteering Act. On several occasions our information resulted in proceedings being dropped, as we were able to show that "profiteering" had not taken place. We firmly opposed on principle the dilution of the Register of Chemists and Druggists by the addition to it of unexamined persons; and it may well be that, without the antagonism aroused against the proposal, the actual dilution would have been far more serious numerically than it was. Finally-for we have no intention of making this summary exhaustive-it was the C. & D.-remembering the long-drawn-out nightmare of the Defence of the Realm Act Regulations—that first called attention to the menace of the Dangerous Drugs Act, and this journal has supplied much authoritative information concerning the Act and Regulations not obtainable elsewhere. The famous "D.D.A." eards for chemists and doctors have sold by thousands.

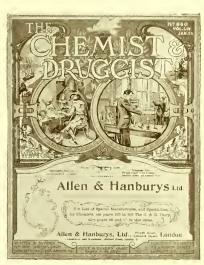
#### RECENT DEVELOPMENTS

This is an appropriate occasion on which to refer to some of the recent extensions of the service which the C, & D, offers to subscribers. Commencing in October 1921, we inaugurated a £500 Free Indemnity Scheme by which annual subscribers who are eligible are indemnified against legal liability in respect of accidents arising in their business deal-









SOME C. & D. SPECIAL ISSUE COVERS A QUARTER OF A CENTURY AGO

ings with the public. The scheme is naturally confined to qualified chemists or others "keeping open shop" in accordance with the Pharmacy Acts, and it has been largely taken advantage of by our subscribers. It has given a large number of chemists the feeling of security that a "friend in need" ensures. The cases which arise are not made public and are settled by assessors specially trained for the work.

F. Another achievement of recent date is the publication of the C. & D. Retail Price List. Our intention was announced in the C. & D., November 26, 1921, and the first list was issued with the C. & D. of January 7, 1922. The list is published quarterly with monthly supplements showing changes in prices made since the quarterly publication. Before the war there were retail price-lists in existence (interesting facts are given in the C. & D., January 7, 1922), but these were only published at long intervals, and did not profess to follow closely changes in prices. When war broke out the fluctuations in the prices of drugs and chemicals became very violent, and the want of uniformity of prices which resulted was calculated to prejudice chemists with the public. The C. & D., as the first-hand source of information regarding all changes in prices, enabled the trade to arrive quickly at the new values of all articles sold in pharmacies. The proceedings which were taken under the Profiteering Act showed that any list produced as evidence must be authoritative and impartial. Our study of the question of the best price-list extended over a long period, and we were not long

in coming to the conclusion that our list must be on a modern costing  $\,$  basis.

Arising out of the publication of the C. & D. Retail Price List, we undertook the compilation of the standard recipes in the C. & D. Price List Formulary, which in its latest form is printed in The Chemist & Druggist Diary, 1923

The completeness of the list also made possible the realisation of an ambition to assist chemists in their annual stocktaking. With this in view we issued at the end of 1922 the C. & D. Stocktaking Sheets for Chemists, which save at least half the labour of stocktaking. Judging by the large number which has been sold, and letters of appreciation we have received, we are justified in stating that the sheets have been found of great help to the trade.

The Business Propaganda pamphlet which was brought out in May to advertise the chemists' business is recent history, as is also the series of articles on the recent notorious prosecutions for alleged dispensing inaccuracies.

notorious prosecutions for alleged dispensing inaccuracies. We recognise that the C. & D. can never reach a period when it can rest on its laurels, and already we have several other developments in view which will help our readers and maintain our reputation.

Achievements such as these would hardly, however, have been possible without the co-operation of the trade, and we take this opportunity of thanking innumerable subscribers for their sympathy and help, often expressed with a thoughtfulness that we appreciate very much.







FAMOUS C. &D. COVERS AT THE BEGINNING OF THE TWENTIETH CENTURY



Photo] THE GLORIOUS SWEEP OF THE HIGH, OXFORD, LOOKING TOWARDS CARFAX

[Hills & Saunders



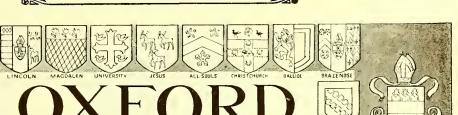
Photo]

GENERAL VIEW OF CHRIST CHURCH, WITH THE TOM TOWER AND THE CATHEDRAL

[Henry W. Taunt

SEE OF OXFORD

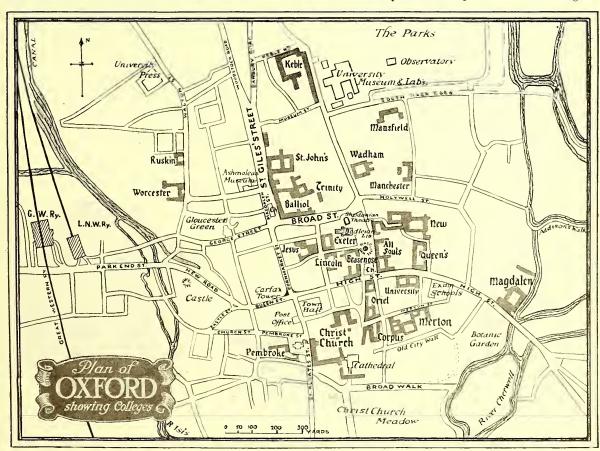
CITY OF OXFORD



VISITORS from other lands, marvelling at our national habit of self-depreciation, may discover, by chance or by long investigation, that there are a few institutions of which we are secretly proud. One of them is the University of Oxford. Seventy minutes after leaving London, the train stops at a station not readily distinguishable from any other station of moderate size: not until visitors have left the railway well behind, and reached the cross-way known as Carfax—formerly Quatervois, a name that explains itself—do they begin to realise the enchantment of the city. The curious tower at Carfax may provoke a question: "If church and tower seem to him [the visitor] low," says C. W. Boase in his "Oxford," "let him remember that they were lowered in the fourteenth year of Edward III., because the citizens galled and annoyed the students from thence with arrows and stones." From this point, looking straight ahead, is the glorious sweep of The High (known to makers of directories and other ignorant persons as High Street); to the right is St. Aldate's Street, with the massive Tom Tower of Christ Church in the middle

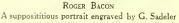
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distance; and to the left is virtually the only main street of Oxford that bears any resemblance to the average business street of an English provincial city. It leads to the Ashmolean Museum, which, in the course of this imaginary itinerary, we shall have occasion to visit. If there is any visitor who thinks that it savours of flippancy to attempt to see much of the city in a single day, let him or her be assured that in one day no less a person than Samuel Pepys "did" Oxford—and, of course, "hustling" was then unknown. And first we will pause for a moment in order to get a rough idea of the historical perspective of the place. Andrew Lang somewhere quotes the whimsical saying that Oxford is "bitterly historical": probably some undergraduate said that. Not the least delightful element in a stay of any length in the city is the discovery that this continuity with the past results in a truer sense of values than is to be found, as a rule, elsewhere. "In other places," wrote Richard Steele in the "Tatler" of July 7, 1709, "they bow to men's fortunes, but here to their understandings." That is equally true to-day: Oxford is blissfully free from the particular brand of arrogance











ROBERT BOYLE
Engraved by R. Woodman after the portrait by
Kerseboom in the National Portrait Gallery

known by the Greeks as  $"\beta \rho \iota s$ , and associated by us with profiteers—and others. And after a glimpse of the city our guests from overseas on July 26 will be better equipped for understanding Shakespeare's Hamlet, the essentially English poise of whose mind has always created a difficulty for readers in other countries.

Oxford lies in the angle formed by the Isis (which lower becomes the Thames) and the Cherwell; and etymologists may, if they please, agree to differ as to whether its name is equivalent to "ford of the oxen" or "ford of the river" (ousen). The germ of the University has been traced to the Priory of St. Frideswide, built about the year 727; and although there is some difficulty in satisfying strict historians on this point, Saxon stonework has existed in the present Christ Church Cathedral ever since its restoration (as a church) in 1004. Coinage has been struck at Oxford at various periods, the earliest mint of which there is any record dating from about 925: the silver minted during the time that Charles I. made the city his headquarters (1642-46) is much prized by numismatists. (It may have been of Charles I. that Matthew Arnold was thinking when he characterised Oxford as the "home of lost causes, and forsaken beliefs, and un-popular names, and impossible loyalties." We trust that he was not thinking of pharmacy.) "The London Gazette," the oldest periodical publication in Great Britain, began its career at Oxford (as "The Oxford Gazette") in 1665. In 1681 a Parliament was held in Oxford for the last time. The following vivid account is given of the final scene by Andrew Clark:-

"Charles, at last assured of French gold, came quietly in a sedan-chair to the Lords about ten on Monday, March 28, bringing secretly behind him in another sedan-chair, with drawn curtains, the robes necessary for the ceremony of dissolving Parliament. All things being ready, at half-past ten he sent for the Commons. They came trooping into the Quadrangle, expecting a speech from the throne, intimating that Charles would give way [in the matter of a Bill excluding his brother from the succession]. They found themselves required to climb, one by one, the narrow stair in the corner of the gateway tower, only to be thrust (the Speaker and some few of them) through a side-door into the Lords, where the King, duly robed, was waiting to dissolve Parliament with a curt sentence."

The tower referred to is the Tower of the Five Orders, designed by Thomas Holt, each story of which illustrates a different order of architecture—Tuscan, Doric, Ionic, Corinthian, and Composite. It will be noticed when visiting the Bodleian Library. These few incidents have been selected, almost at random, for the purpose of reminding visitors how

large a share of English history is associated with Oxford, and in particular with its University. About the year 1200 the University was coming into being as a "studium generale," a community of students and teachers such as was springing up here and there on the Continent, the colleges arising later, one by one, through the generosity of individual founders. Records relating to the thirteenth century mention a district known as the "Spicery," and a deed of 1315 refers to "two shops in the Apothecaria in All Ss. parish." These passages are almost as old as similar ones in City of London records. A few relics of the apothecary's craft have been found in the course of excavations made in Oxford from time to time. Of great names in the University there is no lack. Upon a few we shall have occasion to dwell in some detail: for the rest, it may suffice to recall those of Wiclif, Latimer, Cranmer, Cromwell, Sir Thomas Browne, Sydenham, Addison, Wesley, Shelley, Newman, and Gladstone-names that serve to remind us of the varied uses to which a university education may be put. If, in the mutations of human affairs, a Dark Age should again descend upon Europe, none can doubt that means would be taken to preserve whatever of learning is vital-

> Quod non imber edax, non Aquilo impotens Possit diruere aut innumerabilis Annorum series et fuga temporum;

and it is to homes of learning such as Oxford that the aspirations of men would instinctively turn.



JOHN MAYOW, M.D.
Oxford Physiologist and Chemist
Engraved by W. Faithorne, as frontispiece to
Mayow's "Tractatus Quinque," 1674



Photo] [Lafayette G. CLARIDGE DRUCE, M.A., LL.D Curator of the Fielding Herbarium



Photo] [Elliott & Fry S.[H. VINES, M.A., D.Sc. Sherardian Professor of Botany 1888-1919



#### Some Oxford Notabilities

In relatively few instances have the achievements of Oxford men of science a direct interest for pharmacists, except in so far as the natural sciences enter into the curriculum of a pharmacist's studies. We have selected for mention, in approximately chronological order, some outstanding names.

ROGER BACON, the date of whose birth is usually given as 1214, is, so far as is known, the first great student of science connected with the University. There is no reason to doubt the accepted belief that he began his studies there, and it is quite possible that, as the almost inflexible rule of the age prescribed, he took holy orders. He made at least two visits to Paris, during one of which he was kept in close confinement for several years. Eventually, however, he found a friend in Pope Clement IV, and regained his liberty. The best known of the thirty-six works accepted as his are the "Opus Majus," the "Opus Minus," the "Opus Tertium," and the "Compendium Studii Philosophiæ." According to the compiler of the Rolls "Chronicles and Memorials" volume devoted to Bacon, the first three of these elaborate treatises must have been written within fifteen or eighteen months of his receiving the papal authorisation. The Bodleian Library contains manuscripts of some of his works, attributed to the late fourteenth or early fifteenth century. His interest for us lies mainly in his "Epistola de Secretis Operibus Artis et Naturæ, et de Nullitate Magiæ," in which, it has been ingeniously argued by Lieutenant-Colonel H. W. L. Hime, a recipe for gunpowder exists in an anagram. Chapter eleven of the "Epistola" contains the following passage:-

"Item pondus totum sit 30. Sed tamen sal petræ LURU VOPO VIR CAN VTRIET sulphuris; et sic facies tonitruum et coruscationem, si scias artificium. Videas tamen utrum loquar ænigmate aut secundum veritatem."

Colonel Hime translates (in "Gunpowder and Ammunition") as follows: "Let the total weight be 30. However, of saltpetre . . . of sulphur; and with such a mixture you will produce a bright flash and a thundering noise, if you know 'the trick.' You may find whether I am writing riddles to you or the plain truth." He proceeds: "The mention of the flash and the noise indicates at once that we have here to do with an explosive. . . . As regards the proportions, the earliest we are acquainted with approximate more or less closely to 2:1:1.... Rearranging the letters of the anagram, we get-

#### RVIIPARTVNOUCORULVET,

or since U and V are interchangeable,

#### R. VII PART V NOV. CORUL. V ET;

i.e., r(ecipe) vii part(es), v nov(ellæ) corul(i), v et. The whole passage in the original therefore reads: "Sed tamen salis petræ recipe vii partes, v novellæ coruli, v et sulphuris," etc. : that is, but take 7 parts of saltpetre, 5 of young hazelwood, and 5 of sulphur, etc. . . . If a surmise be permissible, Bacon did not invent, he discovered, gunpowder. Experimenting with some incendiary composition, prepared with pure instead of impure saltpetre, the mixture exploded unexpectedly. He is believed to have died and been buried at Oxford in the year 1294.

THE HON. ROBERT BOYLE, perhaps the most illustrious of the men of science who have been closely associated with Oxford, studied in the city in 1654, at which time he was twenty-seven years of age. Meetings of a few enthusiasts were held alternately at Wadham College and at Boyle's lodgings. He erected a laboratory, kept a number of operators at work, and about the year 1659 completed his so-called "Machina Boyleana," a piece of apparatus presenting all the essential qualities of the modern air-pump. These meetings, it is not entirely fanciful to suppose, suggested the formation of the Royal Society in London a few years later. Boyle left Oxford for London in 1668: and it is of interest to pharmacists to remember that his chief assistant in London was Ambrose Godfrey (or Hanckwitz), afterwards the founder of the business known in the nineteenth century as Godfrey & Cooke. Godfrey helped Boyle, among other things, in experiments that led to the successful manufacture of phosphorus, the method of making which, says Wootton in his "Chronicles of Pharmacy," had till then been kept secret by German chemists who knew it. Boyle deposited with the Royal Society a sealed packet containing an account of his process, and his phosphorus was in considerable demand. All the writers on Godfrey, by the way, appear to have assumed that he opened his shop in Southampton Street, Strand, while still with Boyle at the Maiden Lane laboratory, or, at any rate, on leaving his employ. As a matter of fact, it was not till 1707, nearly sixteen years after Boyle's death, that Godfrey removed to Southampton Street from Earl's Court, Bow Street-a court long since swept away in rebuilding operations. Boyle was a tireless and acute experimenter, as the five folio volumes of the 1744 edition of his writings abundantly show. A pharmaceutical instance occurs to the mind in counection with the laudanums of the two Van Helmonts, father and son, which Boyle "caused to be prepared" in his laboratory, and got some of his medical acquaintances to prescribe. In sending



HENRY DANVERS, EARL OF DANBY Engraved by V. Green, after Van Dyck. Danvers established the first public [botanic garden at Oxford in 1621.

the recipe of the younger Van Helmont for publication in the "Philosophical Transactions," he expressed the hope that it "may come abroad before it be quite too late," the season for quinces being nearly over. It appeared on October 26, 1674, and read as follows :-

"TAKE of opium a quarter of a pound, and of the juice of quinces four pound at least; the opium being cut into very thin slices, and then as it were minced, to reduce it into smaller parts, is to be put into, and well mixed with, the liquor, (first made luke-warm) and fermented with a moderate heat for eight or ten days, rather more than less; then filter it, and having infused in it of cinnamon, nutmeg and cloves, of each an ounce, let them stand three or four days more: if it be a full week, it may be so much the better; then filter the liquor once more, having let it boil a whalm or two after the spices have been put in: this being done, evaporate away the superfluous water to the consistence of an extract, or to what consistence you please.

"Lastly, incorporate very well with it two, or at most three ounces of the best saffron reduced to fine powder.

A wide margin of dose was allowed, both as to the liquid form and the solid. Boyle did not disdain to place his encyclopædic knowledge at the service of the average housewife—witness his "Medicinal Experiments: | OR, A | COLLECTION | OF | Choice and Safe Remedies, | FOR | The most part Simple and easily | prepared: Very useful in Families, | and fitted for the Service of Country | People." At least six editions of this book are known; and practically all the four hundred recipes were, as the author says in his introduction, "parable and cheap." One example may be given:—

" A try'd Medicine for a Whitloe.

"Take House Snails and beat them, shells and all, in a Stone or Wooden Mortar, so long till they be reduc'd to the Consistence of a Cataplasm; which apply somewhat warm to the Part affected, and keep it on for 16 or 24 hours, renewing it then if need be."

Boyle was elected President of the Royal Society in 1680, but declined to serve. He died in 1691, and was buried in the church of St. Martin-in-the-Fields, London.

Mention is also made by Anthony Wood of a Mr. Henry Savile "of Banke, near Halyfax," who, like Wood himself, matriculated at Merton College and became a Master of Arts and an antiquary. He is described in the "Antiquities" as "a noted mathematician of his time, physician, chymist, painter and herald." Savile died in 1617, and, like Boyle, was buried in the Church of St. Martin-in-the-Fields, London.

John Mayow was elected in 1660, when twenty years of age, to a fellowship at All Souls' College. Ten years later he graduated D.C.L. and obtained the privilege of studying medicine, thus becoming exempt from the necessity for taking holy orders. He was elected F.R.S. in 1678, and died in the following year. The writer of his life in the "Dictionary of National Biography" says that "he showed a critical faculty in theory and experiment that is not to be met with in these two sciences [chemistry and physiology] until we come to Lavoisier. His premature death retarded the advance of modern chemistry for more than a century."

Samuel Glass, an eighteenth-century surgeon who practised in Oxford, merits mention here-not, indeed, for his eminence, but by reason of the controversy caused by his Magnesia Alba. In 1764 he issued a essay of thirty-eight pages on the preparation, "wherein," says the sub-title, "its history is attempted, its virtue pointed out, and the use of it recommended." It appears from the introduction to the pamphlet that the author's brother Thomas, an Exeter physician, communicated the process of manufacture to him, and Samuel Glass boasts of its use for "the Royal Infant, His Highness the Prince of Wales." He gives an outline of the method of preparation "from the factitious Epsom salts," but is careful to add that "this process, easy as it may appear in theory, is, however, of a very capricious and uncertain nature," thus preparing his readers, after a lengthy discourse of the virtues of his powder, for his ultimate announcement that "The Genuine MAGNESIA ALBA, prepared by S. GLASS, is sold by him, as usual, at Oxford, in Guinea, Half-Guinea, and Six-Shilling Boxes." Thomas Henry, a Manchester apothecary, was about the same time experimenting with magnesia alba, and in 1773 he published a pamphlet of "Ex-periments and Observations," among which were some reflecting on the value of Glass's product, and complaining of its high price—£2 8s. a troy pound. The Oxford surgeon having died earlier in the same year, his brother took up the cudgels, and a lively interchange followed, Henry, apparently, having the last word in a "Letter to Dr. Glass," adding further testimonies in support of his strictures. Henry sarcastically inquires how it is that the public are informed "that Glass's Magnesia is sold, as usual, at his house in Oxford, though that gentleman changed his habitation for a more durable one, above twelve months since." He also comments severely on the sale of the process to a person of no medical knowledge for the sum of £1,500. Henry communicated his own process to the Royal College of Physicians without reservation, but eventually took out a patent for it. Henry's Magnesia was one of the preparations mentioned in the Schedule of the Medicine Stamp Act, 1812, and is still in regular demand.

SYDNEY HERBERT VINES, F.R.S., M.A., D.Sc., F.L.S., was born in London in 1849, and graduated B.A. at Cambridge University in 1875. He was appointed Sherardian Professor of Botany in the University of Oxford in 1888, and in the same year was elected a Fellow of Magdalen College. Dr. Vines held the Sherardian professorship for thirty-one years—a

tenure exceeded only by those of Humphrey Sibthorp, Williams, and Daubeny. He is widely known as the author of a "Text-Book of Botany," and "Lectures on the Physiology of Plants," and has edited the "Annals of Botany." His connection with the Botanic Garden is referred to in another section of this account.

GEORGE CLARIDGE DRUCE, M.A., LL.D., F.L.S., Ph.C., is remembered by most British pharmacists who have reached middle life as the President of the British Pharmaceutical Confederation in 1901 and 1902, and as a one-time examiner to the Pharmaceutical Society. For a considerable period he carried on a pharmacy in High Street, Oxford, in premises that have been used as an apothecary's shop since the early that have been used as an apothecary's snop since the early years of the eighteenth century. The responsibilities of a business failed to blunt the edge of his enthusiasm for botany, and in 1886 he published his "Flora of Oxfordshire," a book followed eleven years later by the "Flora of Berkshire," dedicated to Queen Victoria. He also wrote monographs for the "Victoria Counties History" on the botany of four Evallsh counties and heavet various times similarly absoluted. English counties, and has at various times similarly elucidated the features of other areas. His appointment as Curator of the Fielding Herbarium, to which further reference is made in our account of the Botanic Garden, dates from 1889. Civic and academic honours came to him as time went on. After a few years of service on the City Corporation, he was elected Sheriff in 1897 and became Mayor three years later. degree of Master of Arts, honoris causa, was conferred upon him by the University in 1889, on which occasion the Latin orator described him as

"probatum et eruditum virum, Societatis tum Linnæensis tum Pharmaceuticæ alumnum, qui multis in negotiis occupatus horas suas subsecivas in rerum naturæ investigatione tam feliciter consumpsit, ut

'Quid quæque ferat regis, quid quæque recuset,' quæ propria sit herbarum florumque patria, quæ præsertim species in hac vicinia sint inveniendæ, nemo melius intellexerit nemo typis mandaverit accuratius.''

The honorary degree of LL.D. was accorded by the University of St. Andrew's. Dr. Druce has collaborated with Dr. Vines in the preparation of detailed accounts of some of the herbaria of the University, a task involving infinite patience. Soon after taking up his residence in Oxford, he founded the Oxfordshire Natural History Society, the success of which led to its eventual amalgamation under his presidency with an older, and at one time exclusively academic, body, the Ashmolean Society. In his capacity of secretary of the Botanical Society and Exchange Club of the British Isles, he gets through an amount of correspondence that leaves his friends wondering how he finds time to compile an annual botanical volume on the lines of the "Year-Book of Pharmacy," and to contribute monographs to the transactions of learned societies. private herbarium and his collection of letters from distinguished people in all parts of the world are enviable possessions -another way of saying that his fame is international.

We have been standing still at Carfax for a long time. (Such things are possible on paper.) Assuming, then, that enough has been said on the general outlines of Oxford's past, we will make our way along The High, passing All Saints Church, St. Mary's Church, and All Souls' College on the left, and on the right University College and the Examination Schools. We thus arrive at Magdalen Bridge, with Magdalen College itself on the banks of the Cherwell. Leaving the college for the moment, we will cross the road to

#### The Botanic Garden.

To Anthony Wood, prince of antiquaries, we are indebted for a record of the first suggestion towards the formation of the Botanic Garden of Oxford University. In the second volume of his "History and Antiquities of the University of Oxford" the entries for the year 1620 begin as follows:—

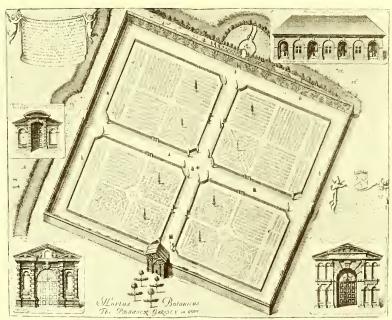
"Saville's Benefaction being in a manner setled, motions were made for the founding of a Natural Philosophy Lecture, as also a Garden for Physical Simples. Which being kindly embraced by the University, care was taken for their settlement soon after . . ."

At that time there was no botanic garden in Great Britain, although on the Continent there were those of Padua (1545), Pisa (1547), Bologna (1567), Leiden (1577), and Montpellier (1598). In the year following the entry of Wood's just cited, Henry, Baron Danvers (afterwards Earl of Danby),





[JACOB BOBART AND THE DANBY GATE From A. Evans' "Vertumnus," 1713, a poem on Bobart's achievements



PLAN OF THE HORTUS BOTANICUS, ESTABLISHED 1621 WITH ITS GATES AND PLANT HOUSE From Loggan's "Oxonia Illustrata," 1675

who was residing at Cornbury, Oxfordshire, selected about five acres of land opposite Magdalen College (then outside the city), and presented the University with a sum of money for its purchase. Let Wood tell the story:-

". . . I think it convenient that somewhat should be said of the Physic Garden, because 'twas primarily founded for a Nursery of Simples, and that a Professor of Botanicey should read there, and shew the use and virtue of them to his Auditors.

"Henry Lord Danvers therefore, . . . sometime a Gent. Com. of Christ Church, being minded to become a Benefactor to the University, thought that his money could not be better laid out, than to begin and finish a place, whereby learning, especially the Faculty of Medicine, might be improved. At length selecting a place without the East gate of Oxford, near the river Cherwell, which was then meadow ground, and had in ancient time been a Cemitery for the Jews of Oxon,

gave to the University 250l to make a purchase of it. Upon the receipt of it they bought out the present possessor thereof . . . and not long after the University took a lease of the said ground a comely Gatehouse of polisht stone . . . In the year 1633 all the wall being finisht, and soon after the floor raised, which cost the Earl 5,000l and more, he caused to be planted therein divers Simples for the advancement of the Faculty of Medicine,'

The date inscribed on the gateway (1632) commemorates the completion of the buildings, which were erected to the designs of Inigo Jones. The bust over the gateway is that of the founder; the statues on either side are those of Charles II. and James II. An agreement

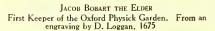


Photo]

THE BOTANIC GARDEN, OXFORD, TO-DAY WITH THE TOWER OF MAGDALEN BEYOND

[Henry W. Taunt







ROBERT MORISON, M.D.
First Professor of Botany at Oxford, 1669–1683.
Engraved by R. White, after Sumar,



JOHN JACOB DILLENIUS, M.D.
Sherardian Professor of Botany at Oxford, 1734-1747
Engraved by James Heath

that has been preserved shows that in 1641 Jacob Bobart became supervisor at a salary of £40 per annum. He it is who is represented standing in the foreground in our illustration of the gateway. "In his latter dayes," says Baskerville, "he delighted to weare a long Beard, and once against Whitsontide had a fancy to tagg it with silver, which drew much Company in the Physick-Garden." He died in 1679, leaving a son of the same name who became the second of a long line of Professors of Botany. The Earl of Danby intended to endow the Garden; but he died suddenly, leaving the family property heavily engaged. His surviving brother, who in his day made a fashion of Italian gardening, also purposed endowing the Garden, but made no will. Bobart's management, however, the Garden prospered, and in 1648 a Latin catalogue attributed to him enumerated no fewer than 1,600 plants in cultivation. Among the treasures of the grounds were two large yew trees, which in Restoration days were trimmed to represent giants. These specimens of topiary work afforded ample scope for the wits of the dayfor example, in 1662, a ballad appeared with the title, "Upon Mr. Jacob Bobart's Yew-men

of the Guard to the Physick Garden, to the tune of the Counter Scuffle." Pepys visited the Garden once, and Evelyn twice. The notes made by the latter in his Diary on these occasions are of no special interest, but Evelyn's name occurs among those of donors to the Morison Herbarium.

Considerations of space preclude a detailed mention of each of the distinguished men who have been associated with the Garden. A good idea of the treasures of the oldest British botanic garden and of its fascinating history may be obtained from three books written jointly by Dr. G. Claridge Druce, M.A., Curator of the Fielding Herbarium, and Dr. S. H. Vines, M.A., ex-Sherardian Professor of Botany in the University. These are: "An Account of the Herbarium of the University of Oxford," Parts I. and II.; "The Dillenian Herbaria"; and "An Account of the Morisonian Herbarium." Even in so brief a



Photo] [Henry W. Taunt The Botanic Carden through the Danby Gate

sketch as this, however, we cannot omit a reference to the founding of the Sherardian chair of botany, an event that proved to be of the first importance in the history of the Garden. William Sherard, a native of Leicestershire, took the degree of B.C.L. at St. John's College in 1683. He spent a long time in foreign travel, and about 1704, when he was consul at Smyrna, undertook, among other things, the compilation of a "Pinax" that was to have been the "Index Kewensis" of its day. On his death in 1728 he left his herbarium of about 14,000 plants and his library of 400 books to his old University, together with the sum of £3,000 for the purpose of endowing a chair of botany, of which the first occupant, he stipulated, was to be his botanical assistant Dillenius. In 1734, Dillenius took up his residence in Oxford; but although the Sherardian "Pinax" survives in the Library of the Gardens as a monument to his labours, it remains unpublished. Linnæus visited Oxford two years after Dillenius had begun his duties; and the visit is remembered, apart from its historical interest, by an amusing incident. Walking with Linnæus in the Garden, Dillenius incautiously

remarked to a third person present (Linnæus, as it was thought, knowing no English), "This is the young man who has brought confusion into botany": before they had finished their walk Linnæus took occasion to remark, with reference to some matter that had arisen, "I hope I have not brought confusion into that." The two professors of different botanical systems thought highly of each other, however, and corresponded from time to time. Dillenius is universally remembered as the author of "Historia Muscorum" and "Hortus Eltha-mensis," monumental works that sold but slowly and involved him in considerable loss. Of the "Hortus" Linnæus wrote: "Est opus botanicum quo absolutius mundus non vidit." The list of Professors of Botany is as follows :-

Morison, Robert . . 1669-1683 Bobart, Jacob (the

younger) ... 1684–1719 Sandys, Edwin ... 1720–1724 Trowe, Gilbert ... 1724–1734 Sherardian Professors

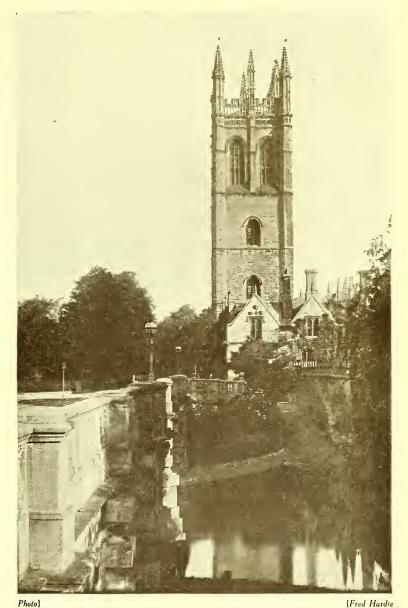
Dillenius, John Jacob . . . 1734-1747 .. 1747-1784 Sibthorp, Humphrey ... 1784-1793 Sibthorp, John ... 1795-1834 Williams, George Daubeny, Charles Giles Bridle 1834-1867 Lawson, Marmaduke Alexander 1867-1884 1884-1888 Balfour, Isaac Bayley . . 1888-1919 Vines, Sydney Herbert Keeble, Frederick William 1919 -

The present curators of the Garden are the Rev. Henry J. Bidder, the Rev. Cyril R. Carter, Mr. Arthur W. Pickard-Cambridge, Dr. G. Claridge Druce, Mr. Edward Armstrong, and Sir Herbert Warren (President

of Magdalen College).

During a recent visit to Oxford we had the privilege of being taken through the Garden, Library, Laboratories and Museum (with its herbaria) by Dr. Claridge Druce, who pointed out, among other things in the grounds, a magnificent specimen of Sophora japonica (freely drawn upon for inspiration by Japanese artists), and examples of Corylus Colurna (the largest in Great Britain), Ginkgo biloba, Pyrus domestica, a seedling from the Wyre Forest tree, Populus nigra, and Populus serotina. It is interesting to learn, by the way, that the curators declined to be stampeded into growing potatoes in their classic soil during the war, Oxfordshire being, of course, an almost entirely agricultural county. Of the library it must suffice to say that it contains practically every botanical classic and modern work of reference, as well as a superb collection of rare herbals and books less strictly in the line of scientific develop-ment. The laboratories consist of three main kinds—the research laboratory, for research per se; the advanced botany laboratory for the Honours in Science course of the University; and the laboratory for preliminary course students, about three-fourths of whom are destined to a medical career. The last-named laboratory is subdivided into physiology and morphology departments. There is also a well-equipped lecture-room. The School of Forestry (under Professor Troup) and the School of Rural Economy (under Professor Somerville) are regarded as offshoots of the teaching activities of the laboratory, and illustrate the present-day tendency to specialisation. In the research laboratory, we learn, the Japanese larch, hydrogen-ion concentration and the fungal diseases of willows are among the subjects now under

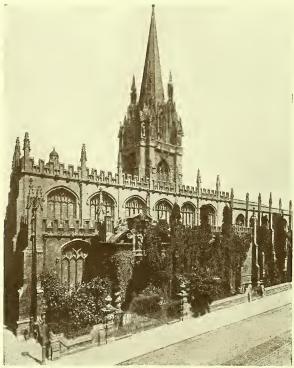
willows are among the subjects now under investigation. Finally, the collection of herbaria, although in point of size it may be equalled or exceeded elsewhere, is probably unrivalled in the world for sheer historical interest. We have already referred to the Sherardian "Pinax," unique among manuscripts: the Sherardian Herbarium, consisting of over 14,000 sheets labelled by Sherard and Dillenius, is hardly less interesting. It appears that Sherard purchased various collections from time to time during the first quarter of the eighteenth century, and these, naturally, have proved to be of unequal value. Some of the subsidiary collectors, for example, have omitted to localise their plants—a circumstance that has launched Dr. Druce and his colleagues into the never-ending sport of attribution. Going back another century, we come to a unique collection dating from 1606, consisting of 300 specimens enclosed between the covers of an early Italian service book, and labelled on the back "Herbarium Diversarum Naturalium Gregorio a Reggio," an inscription that proved sufficiently difficult to reach under its accumulation of dust. The specimens are mounted on a thick hand-made paper of a curious bluish tint, and the adhesive used for the



THE TOWER (1492–1506) OF MAGDALEN COLLEGE, FROM THE RIVER CHERWELLT ("THE CHAR.")

white-paper slips was made from incense. Lying next to this volume is another curious (and almost unique) work, consisting of copperplate engravings done in Vienna, about 1780, from coloured drawings of the fifth or sixth century taken from those of Dioscorides by order of Anicia Juliana, daughter from the Emperor Flavius Anicius. These plates were destroyed after five copies had been printed. In the same room, too, are Bauer's coloured drawings for the "Flora Graeca" of John Sibthorp, whose Herbarium, collected during visits to Greece and the Grecian Archipelago in 1786 and 1794, is housed under the same roof. Bauer made upwards of a thousand water-colour drawings of the plants collected, as well as five hundred of the animals, birds and fishes of Greece. The latter set was never published, but is preserved in the Library; the "Flora Graeca" was issued at a cost of £25,000. It is safe to say that Bauer's coloured drawings, with their marvellous accuracy of detail, are the finest of their kind in existence. Bauer's Fauna awaits the arrival of some The Fielding Curator has in his own possession 134 of the water colour drawings made by Bauer during his visits to Greece in 1786. The other herbaria must, perforce,

be passed with a mention: they are known as the Bobart, Morison, Du Bois, Dillenius, Shaw, Sibthorp, Fielding (now the General Herbarium), British, and Cryptogamic Herbaria. Adders of different tints are used according to the geographical division adopted in the herbaria, thus obviating the possibility of misplacing any example. Although Dr. Druce is not given to magnifying his office, it is evident that it has been the work of years to systematise the collections, which must number over a quarter of a million



Photo] [Fred Hardie St. Mary's, the Official Church of Oxford University (c. 1300)

specimens. Of the many things in Oxford that appeal alike to the eye and to the historie sense the Botanic Garden is assuredly not the least.

Before leaving this part of the city, we must get an idea of

#### Magdalen College,

glancing first at the lofty and massive tower, from the top of which a Latin hymn has been sung at 5 o'clock on the morning of May Day every year for some centuries past. Magdalen College was founded in 1448 by William of Waynflete, and the greater part of the present structure dates from that period. The College boasts a long list of famous names—Wolsey, Hampden, Prince Rupert, Addison and others; and when the Prince of Wales entered Magdalen as an undergraduate he confronted, when dining in the hall, the portrait of Henry Prince of Wales, eldest son of James I. Addison is commemorated in Addison's Walk, a delightful sylvan promenade by the Cherwell. The Hall is of unusual magnificence, containing a finely earved Jacobean oak screen, linen-fold panelling of still earlier date, and a timbered roof given recently by a member of the College. As in most college halls, portraits of benefactors cover the walls. The Cloisters, the Founder's Tower, the grounds and the Grove with its herd of deer are of unsurpassed beauty; and it would not be easy to parallel the experience of strolling, on a brilliant summer day, from the blaze of The High into the dim religious light of Magdalen Chapel, where candles in massive brass sconces are used for the daily services. Among the treasures of the College are the books and manuscripts bequeathed to it by John Goodyer, a botanist mentioned in the 1633 edition of Gerard's "Herball."

We next make our way to the other college intimately associated with Wolsey,

#### Christ Church.

Wolsey's fall from power prevented the execution of all his plans for Oxford; but Christ Church, as it stands, is eloquent of the spaciousness of his designs. The upper part of Tom Tower was superimposed by "that prodigious young scholar Mr. Christopher Wren," as Evelyn calls him; and it contains the famous "Tom," a bell brought from the neighbouring Osney Abbey, and recast in 1680. By climbing the tower, a fine view of the city may be obtained. The Hall, famous all over the world, was part of Wolsey's scheme, and dates from 1529. The library and picture gallery are also worth a visit. Extending eastward from one side of the great quadrangle is

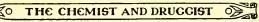
#### Christ Church Cathedral,

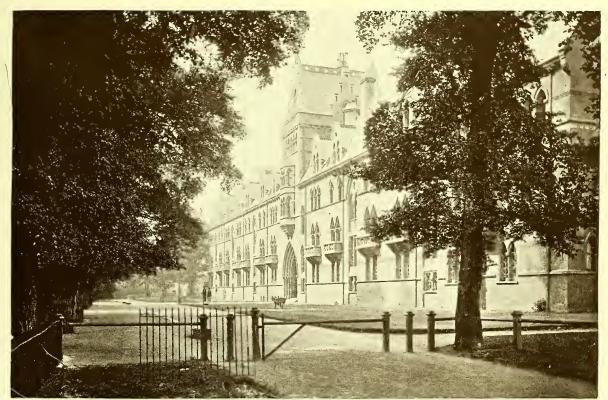
a building that serves the dual purpose of the Chapel of Christ Church and the Cathedral of the diocese. The fabric, as we have seen, contains Saxon relies: among these are portions of the shrine of St. Frideswide. The exquisite vaulting of the roof of the choir strikes the eye, perhaps, more than the other architectural features: this is Perpendicular work of the fifteenth century. Though not large, the cathedral is full of interesting monuments. Robert Burton, author of "The



THE GREAT TOM TOWER (c. 1682), CHRIST CHURCH

Anatomy of Melancholy," was buried in the north aisle, and left many of his books to the Bodleian Library. The stained glass, some of which dates from about the year 1300, is another important detail; and music lovers will note with interest the pipes of a 32-foot "open" stop placed, a little distance from the organ, against the wall on either side of the west door. It may be mentioned that the see of Oxford is of comparatively recent creation, the city being formerly in the diocese of Lincoln. James II. touched for the King's evil in the cathedral in 1687. The Dean of Christ Church has always been a personage in the life of the city: in this connection





Photo]

Meadow Buildings, Christ Church College 'The House"

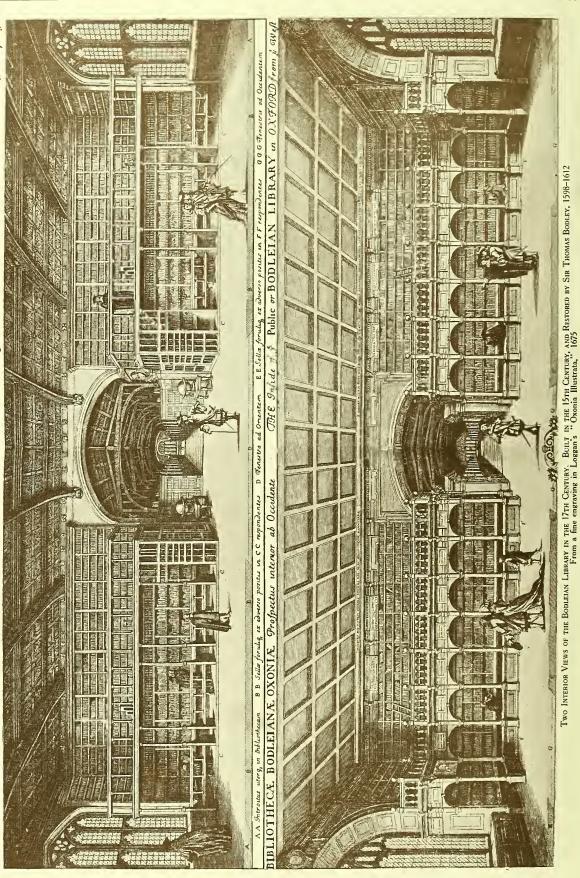
[Henry W. Taunt



Photo]

CHRIST CHURCH COLLEGE, THE DINING HALL (1528)

[Hills & Saunders







Photo]

THE BODLEIAN LIBRARY IN THE TWENTIETH CENTURY—A MODERN GALLERY

.[Hills & Saunders



Photo)

After Four Hundred and Fifty Years; A Gallery of the Bodleian (built 1445–1488) in 1923 Seen in the Centre of Lower Engraving on the Opposite Page

Fred Hardie

may be instanced Dr. Aldrich, of "Bonny Christ Church Bells" fame, and Dr. John Fell, the original of the wellknown:—

"I do not like thee, Dr. Fell;
The reason why, I cannot tell;
But this I know, and know full well,
I do not like thee, Dr. Fell."

As we shall find when we come to the Clarendon Press, Fell was in reality a zealous promoter of learning. He became bishop of the see in 1676.

Of the twenty-one colleges of Oxford, we have only time to single out one more, and that for a particular reason—

#### University College

which stands on the Christ Church side of The High. The interest for us in this college consists in the fact that the poet Shelley studied here. A most unlikely person to interest

Before we cross the street, we may find time to admire the Examination Schools, a modern building on an impressive scale designed by Sir Thomas Jackson, and then we arrive at

#### St. Mary's Church

the official church of the University. The handsome porch, with its statue of the Virgin, is familiar through photographs: the interior, of cathedral proportions, is Perpendicular work. Among the memorial tablets on the walls is one to James Hume, an apothecary who died in 1766. There is possibly no other church in England so rich in historical memories—of Wicliff, Cranmer, Laud, and in modern days Newman and Pusey. The story goes that Pusey, early in his career, was for some unorthodox statement in the pulpit inhibited from preaching there again, and it was forty years before the ban was lifted. When, in his old age, he was again admitted as University preacher, his first sermon began with the words:



Photo]

THE MODERN ASHMOLEAN MUSEUM, CONTAINING UNRIVALLED TREASURES OF ART AND ARCH. EOLOGY

[Henry W. Taunt

pharmacists, it may be objected; but the fact is that Shelley was at that time a devotee of chemistry. The following passage from his friend T. J. Hogg's "Life of P. B. Shelley," which relates to the year 1810, is conclusive:—

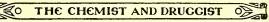
"... money, stockings, prints, crucibles, bags, and boxes, were scattered on the floor and in every place; as if the young chemist, in order to analyse the mystery of creation, had endeavoured first to re-construct the primeval chaos. The tables, and especially the carpet, were already stained with large spots of various hues, which frequently proclaimed the agency of fire. . . . Two piles of books supported the tongs, and these upheld a small glass retort above an argand lamp. I had not been seated many minutes before the liquor in the vessel boiled over, adding fresh stains to the table, and rising in fumes with a most disagreeable odour. Shelley snatched the glass quickly, and dashing it in pieces among the ashes under the grate, increased the unpleasant and penetrating effluvium."

Shelley, as we know, was expelled from the University for his pamphlet on atheism; but his old college has made amends in the shape of a memorial in white marble, a recumbent figure reposing in an enclosure railed off like a chapel. Irresistibly his words rise in the memory:—

"Life, like a dome of many-coloured glass, Stains the white radiance of Eternity Until Death tramples it to fragments." "As I was saying when I last addressed you——." From this church we make our way through a side street to

#### The Bodleian Library

Said to be sixth in point of size in the world's libraries (though statistics of this kind are never final), the Bodleian Library—"the Bodleian" for short—is of almost unrivalled interest so far as English-speaking readers are concerned. Since November 8, 1602, its doors have been open to all accredited students; but this is by no means the beginning of its romantic story. For that we must go back to Humphrey, Duke of Gloucester, youngest son of Henry IV. Humphrey is believed to have been educated at Balliol College. However that may be, he began making presents of books to the University in or about the year 1411, and in 1439 he gave 129 volumes or manuscripts. (This date, of course, was prior to the introduction of printing.) Other gifts followed, and in 1444 the University resolved to move its books from the Convocation House, and to build a new library as an upper storey of the Divinity School, which had been begun in 1426. The "masters" of the University offered the duke the title of founder, and obtained from him in return a promise to contribute the sum of £100 towards the work, in addition to the remainder of his books. The central portion of the main



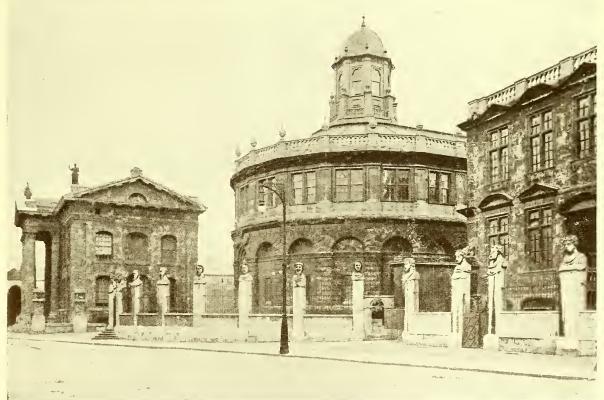
reading-room, still known as Duke Humphrey's Library, was finished about 1488 by the munificence of Thomas Kemp, Bishop of London. It was destined to a severe ordeal; for in 1550 the Commissioners of King Edward VI. despoiled it, and six years later the University disfurnished it. So effectually was this vandalism perpetrated that only three volumes of the original collection now remain in the Library. This state of desolation lasted till 1598, when Sir Thomas Bodley took matters in hand. Sir Thomas refitted and restocked it, and in 1610-12 he added a wing. The wooden benches for students in this part of the Library remain much as they were in his day. In the original statutes, drafted by him, it was provided that the librarian's stipend was to be £22 13s. 4d. per annum, and that he should never marry. To the annoyance of the pious founder, however, the first librarian appointed demanded a salary of £40, and asked leave to wed. The requirement of celibacy remained in force till 1813. Both Charles I. and Cromwell attempted to borrow books from the Library, and were refused: autocrats as they were, they gave way to the provisions of the statutes. In 1640 one Thomas Williams fell foul of a certain Baron von Eulenberg in the Library, and they fought with their walking-sticks: hence was promulgated an order that no student should thenceforth be admitted carrying a staff or other weapon.

A few of the treasures exhibited to the public may be mentioned. One of these is a curiously interesting herbal of the late eleventh or early twelfth century, written in England and possibly at the Abbey of Bury St. Edmunds, to which it is known to have belonged in the fourteenth century. The general scheme is that a coloured drawing occupies the centre of each page, with text on each side of it. Students of engraving will find interesting the different "states" of the Droeshout portrait of Shakespeare; and everyone will be attracted by the most remarkable of all First Folios, the one that was lost to the Bodleian from 1664 to 1905. Briefly, the assumption is that it must have been turned out of the Library when a later edition of the Folio was received: the place it originally occupied is marked by a cross on one of the shelves. Nothing more was heard of it until its discovery in Derbyshire



GATEWAY, St. JOHN'S COLLEGE (1613)

in the present century, when it was repurchased for the sum of £3,000. An attempt was made to ascertain which of the plays, judging by the condition of the volume, had been most read: it was decided that, if wear was any guide, the most popular must have been "Julius Cæsar" and "Romeo and Juliet." Some of the exhibits in the adjoining picture gallery are also of remarkable interest. There is, for instance, a Persian manuscript of the Rubaiyat of Omar Khayyam used



Photo]

[Kills & Saunders





A Bastion of the Old City Wall in New College Gardens (14th Century

by FitzGerald, and there are some Shelley relics with a pathos of their own. One of the most extraordinary things is an open copy of Dante's "Inferno," annotated, with an illustration printed upside down. Those who know their Pater well may remember his description, in the chapter on Botticelli in the Renaissance studies:—

"So he becomes the illustrator of Dante. In a few rare examples of the edition of 1481, the blank spaces, left at the beginning of every canto for the hand of the illuminator, have been filled, as far as the nineteenth canto of the Inferno, with impressions of engraved plates, seemingly by way of experiment, for in the copy in the Bodleian Library, one of the three impressions it contains has been printed upside down, and much awry, in the midst of the luxurious printed page."

Remembering that the Bodleian can claim a copy of every book published in this country, visitors may wonder where the accumulation is stored: the question is partly answered by a walk through the adjoining

#### Radcliffe Camera

which, they may learn, contains a vast basement devoted to books in addition to those seen in the reading-room itself; and this, in its turn, relieves the pressure on the Bodleian proper. Consisting of a rotunda surmounted by a dome, the Radcliffe Camera, as its name suggests, owes its origin to Dr. John Radcliffe, a brusque and fashionable physician who died in 1714. He was in practice in Oxford prior to 1684, when he migrated to London and amassed a fortune. Most of his property was left to Oxford University; other estates were left to his executors, and from these funds the Radcliffe Infirmary and the Radcliffe Observatory were built. The Camera was completed in 1747. Those who can face the narrow stone stairs leading to the roof will be rewarded with a view that few cities can equal.

Returning through the quadrangle of the Bodleian, and noting the Tower of the Five Orders already referred to, we shall do well to glance at the interior of

#### The Sheldonian

a building in which degrees are conferred and the annual commemoration of benefactors is held. This is a D-shaped structure erected in 1664–69 from the design of Sir Christopher

Wren at the expense of Gilbert Sheldon, Archbishop of Canterbury. Sheldon, says Goldwin Smith, appealed for subscriptions; but so disgusted was he at the absence of any tangible response that he refused ever to see the theatre. Nominally holding about 1,500 people, it has been known to accommodate, on occasion, more than 3,000 on the "standing room only" principle. One of these crushes marked the installation of "the Iron Duke" (Wellington) as Chancellor. Strange to relate, he put his academic cap on the wrong side foremost, and made a false quantity in his Latin speech. The Sheldonian was one of the homes of the

#### Clarendon Press

afterwards removed to the neighbouring Clarendon Building, and ultimately to the present premises in Walton Street. The history of the Press is a distinguished one. In 1478, a year after the first efforts of Caxton, the Press began its work. There was some cessation during the sixteenth century, but in 1586 a bookseller, Joseph Barnes by name, was appointed manager, and continued in that position till 1617. Archbishop Laud secured a charter in 1636 entitling the University to print "all manner of books"; and in the latter part of the same century Dr. John Fell, to whom previous reference has been made, assembled the punches and matrices from which the types known by his name are (or very recently were) cast, and promoted the erection of the

mill at Wolvercote, where the paper for the Press is still made. The Sheldonian housed the Press from 1669 till early in the eighteenth century, when the Clarendon Building, erected chiefly from the profits of the copyright of Clarendon's "History of the Rebellion," received it. The delegates of the Press still meet there. The present building was finished in 1830: the total weight of type in use there is estimated at more than 1,000,000 lb. Close to the old Clarendon Building is the

#### Ashmolean

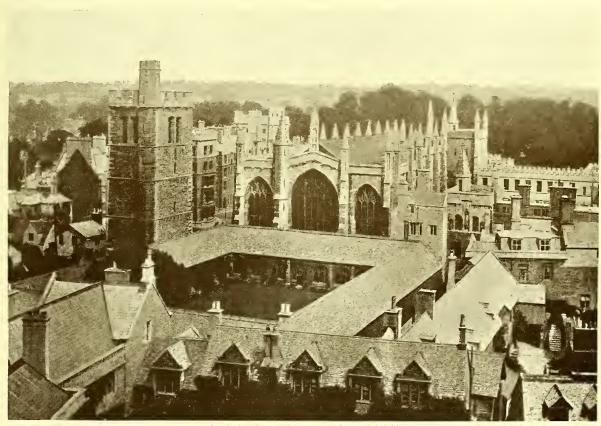
once the home of the famous collection now in the Museum at the corner of St. Giles's Street and Beaumont Street. The old building has a double interest for us, in that it was originally associated with the first official recognition of natural science by an English university. The inscription (in gold characters) over the entrance was:—

#### MUSÆUM ASHMOLIANUM : SCHOLA NATURALIS HISTORIÆ : OFFICINA CHIMICA.

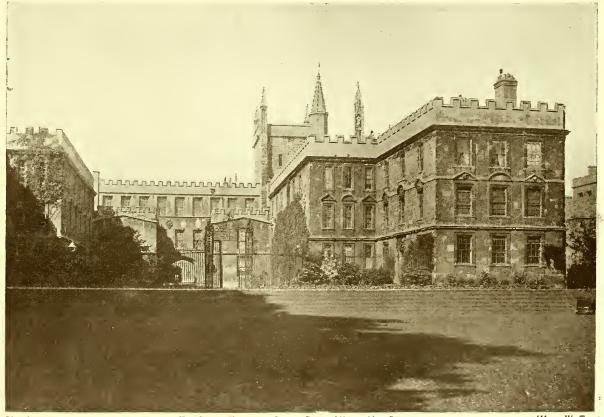
This, the oldest museum of the kind in Great Britain, derives its name from Elias Ashmole (1617–92), a man of some botanical attainments who became a friend of Selden and other learned people, and was made Windsor Herald by Charles II. He presented to the University the collection made by the Tradescants, father and son, proprietors of a botanical garden and museum, the outcome of extensive travelling, in South Lambeth, London. (After the elder man Tradescantia was named.) On the death of the younger Tradescant, Ashmole succeeded, after some litigation, in securing the collection, and in 1677 he offered it to the University on condition that a building should be erected to contain it. The building was finished in 1683, and Anthony Wood, most painstaking of observers, makes the following remarks on the provision made for teaching chemistry:—

"The middle roome is the School of Natural Historie, where the professor of chymistry, who is at present Dr. Robert Plot, reads three times a week... The lower room, a cellar to which there is a descent by a double pair of staires, is the Laboratory, perchance one of the most beautiful and useful in the world, furnished with all sorts of furnaces and all other necessary materials... Neare adjoyning to the laboratory are two fair roomes, whereof one is designed for a





BIRD'S EYE VIEW OF NEW COLLEGE, BUILT 1379-1386



Photos]

THE GARDEN FRONT AND GARDEN COURT (1684) OF NEW COLLEGE

[Henry W. Taunt

chymical librarie, to which several books of that argument have been already presented. The other is made use of as a store roome for chymical preparations, where such as stand in need of them are furnished at easie rates . . . "

The laboratory and a residence for the professor of chemistry were used until well into the nineteenth century. Wood (born 1632, died 1695) has a good deal to tell us about the chemical activities of Boyle and others, including himself. One extract reads:—

"... the Royall Societie at Oxon, and of Chemistry. They did in Clerk's house, an apothecary in St. Marie's parish, exercise themselves in some chimicall extracts, which were carried on and much improved before the king's restauration, in so much that severall scholars had privat elaboratories and did performe those things which the memory of man could not reach. But the one man that did publickly teach it to the scholars was one Peter Sthael, borne at Strasburgh in Royall Prussia, brought to Oxon by that eminent scholar Mr. Robert Boyle a sojourner in the University anno 1659, and by him setled in the same house wherein he lived viz. in that house (owned then by an apothecary), next on the west side of University Col. sometimes knowne by the name of Deep hall."

Again, in his Diary for May 1663, the entries begin:-

"1, F., at Mat Leeches, with the chimicall club, 2s.; paid to Kitt at the elaboratory 4d. and 2d. towards the next week... 18, M., for the making of aurum fulminans, 1s. . . . 30, S., to Mr. Sthael for the conclusion of our class, 30s."

Mat Leech (or Leeche) was the keeper of an alehouse, whose till was presumably enriched on that May Day with the proceeds of several rounds of drinks. Wood was a customer to more than one apothecary, as the following extracts show:—

"13, T. [November, 1660], paid Mr. Alport for a purge that I tooke the day before, 2s. 6d., though 1s. too much."

"A mixture, 3s.; oyles, 6d.; a plaster, 6d.; pomatum et plaster, 6d.; a clyster, 1s. 6d.; a draught, 1s.; carduus, ½d.; pills, 1s.; syrrup, 9d.; 8s. 11½d. June the 11th 94. receiv'd of Mr. Anthony Woods eight shillins and sixpence in full by mee Hen. Reeks."

One other of the Wood memoranda is of interest; it is dated March 1659:—

"In the latter end of this yeare [ending March 24].... scurvy-grass drink began to be frequently drunk in the mornings as physick-drinke."

The present Ashmolean Museum was erected in 1841–45, and thither we turn our steps through the old-world Broad Street, which, it may be hoped, will never lose its atmosphere of past centuries—chiefly, if precision may be hazarded, the eighteenth. The Ashmolean Museum is famed far and wide, not so much for particular exhibits as for the high level of its general interest. One of the outstanding collections is that of Cretan objects assembled by Sir Arthur Evans, at one time Keeper of the Ashmolean. The clou of the many beautiful objects on view is probably the Alfred Jewel, the connection of which with King Alfred (or Ælfred) is evidenced by an inscription translated "Ælfred ordered me to be wrought." It was found in 1693 at Newton Park: its purpose is still a matter of conjecture. The lantern of Guy Fawkes is another rarity; a collection of watches also merits inspection, and there are many pictures. In modern times the science collections have been separated from those pertaining to art and archæology, and have been removed to the

#### University Museum

This, well placed at the beginning of The Parks, is planned on an imposing scale, and is almost surrounded, hospital-wise, by laboratories devoted to one or other of the natural sciences. Here may be seen many exhibits of popular appeal—for example, a natural magnet supporting a weight of 160 lb. Attached to the Museum is the Ashmolean Library, housed in a building modelled on the Glastonbury Kitchen: its books have been rearranged by Dr. Claridge Druce, to whom there is a botanical memorial on one of the stone corbels of the Museum in the shape of a carving of Potamogeton Drucei. Research is constantly going on in the adjoining laboratories; and it may be of interest to give the names of the present holders of chairs in chemistry and pharmacology. The Waynflete Professor of Chemistry is Dr. W. H. Perkin, F.R.S.; the Dr. Lee's Professor of Chemistry is Mr. F. Soddy, F.R.S.; and the Professor of Pharmacology is Dr. J. A. Gunn, F.R.S. It may also be mentioned that the Oxford Technical School, the headmaster of which is Mr. A. H. Flemming, B.Sc., has a pharmacy class. But we have seen enough for one day. If we cannot remember anything about Erasmus as we go home, we will tell each other stories, authentic or otherwise, about Dean Spooner.



Photo }

THE QUADRANGLE, BRASENOSE COLLEGE, SHOWING GATEWAY TOWER (1520) AND RADCLIFFE CAMERA BEYOND



URING the last two decades many magnificent buildings have been raised to house the business community of London, but it would be difficult to find one which, in architectural beauty and richness of design, can surpass the new home of the Port of London Authority on Tower Hill. The chief feature of the design is English Renaissance reminiscent of Sir Christopher Wren, but here and there is to be found the intervention of French and of Greek influence. The architect in charge of the work was Mr. T. E. Cooper, F.R.I.B.A. The building, which was commenced in 1911, had not the war intervened, would have been completed in 1916. The opening ceremony was performed on October 17, 1922, by Mr. Lloyd George (Prime Minister at the time) The opening ceremony was performed on October amid a distinguished company which included ambassadors, members of the Cabinet, representatives of both Houses of Parliament, ehurch dignitaries, the Lord Mayor, merchant princes, leading bankers and prominent members of the Stock Exchange and other City institutions.

#### AN HISTORICAL SITE

Notable, and at times terrible, events have taken place in the immediate neighbourhood of this fine building. The Tower Hill and Tower of London appear again and again throughout the pages of history. Seething Lane, where Pepys went to live in July 1660, is at the rear of the edifice, and the great fire reached as far as All-Hallows Barking Church which is at the foot of Seething Lane on the West side of Tower Hill. The immortal diarist and his wife are buried in the adjacent church of St. Olave. In the church of All-Hallows Barking, William Penn, founder of Pennsylvania was baptised on October 23, 1644. John Quincey Adams, afterwards President of the United States, was married here. Peter the Great, while working in the shipyard at Deptford, resided in Muscovy Court in a house demolished in the course of erecting the new building. The association of this famous Russian monarch and Pepys with this neighbourhood has been perpetuated by naming two of the new streets Pepys and Muscovy Street respectively.

#### EXTERIOR OF THE BUILDING

The photograph on the next page gives an adequate idea of the general outline of the structure. From the air the building presents the appearance of a pentagon with the base facing Tower Hill. The front rises sharply into a pyramidal tower, and this is the dominant feature of the exterior. The main entrance to the building faces Trinity Square, to which is displayed a magnificent loggia of fluted Corinthian columns erected on a sub-structure that is approached by a flight of steps. The loggia is flanked by massive pylons strengthened at the angles by pilasters that are of the same design as the columns. Above the columns an entablature is to be found which completely surrounds the whole building. Superimposed is a balustrade which with the previouslymentioned entablature and pylons forms a framework to the loggia. Between the two Corinthian columns which form the base of the tower are placed groups of sculpture symbolising "Commerce" on the one side and "Navigation" on the other. The great tower itself is placed on supporting pylons between which are arched openings. A striking figure appears in the centre tower of the arch in the form of Father Thames, who is seen gazing fixedly towards the widening reaches of the river. On one side of the tower is a group symbolising "Produce," represented by a bulldrawn chariot and figure with the fruits of the earth and on the other is "Exportation." Around the building is a base

of grey granite from which rises the facing of Portland stone. The south and east elevations link up the angle pavilions and the north and west sides each furnish sufficient space for the introduction of a central feature which repeats the pavilion at either end. Symbolical figures appear over the entrance doors of the angle pavilions, each of which is surmounted by a carved cartouche supported by a cornucopia from which are suspended festoons enclosing a rectangular panel.

#### INTERIOR

Leading from the loggia into the vestibule are five doorways filled with ironwork grilles of beautiful design. These grilles fold back during business hours without encroaching on the main entrance doors. All the doors throughout the building are of oak, panelled and enriched and filled with plate glass set in bronze grilles of excellent workmanship. The walls of the main entrance hall (a room of 63 ft. long by 25 ft. wide and two stories high) are divided into five bays by broad pilasters which extend to the plaster cornice. Subiaco marble obtained from Italian quarries covers the pilasters and walls. This marble resembles ivory in appearance. It is finely polished, the texture presenting a delicate series of markings, and its beauty is enhanced by superb workmanship. Over the vestibule is a gallery on the first floor level; this has five windows through which comes the main lighting of the hall. A similar scheme of decoration is followed in the principal rooms, corridors and staircases in the building as, except where oak or walnut panelling is used, ivory-like surfaces are decorated by relief figuring. The floors of the various halls, corridors and staircases are laid with Roman marble of a creamy tint with dark grey bands of stone in various designs. On the pilasters are mcdallions surrounded by laurels and festoons each surmounted by a symbolical device.

#### THE ROTUNDA AND OPEN OFFICE BLOCKS

The principal apartment on the ground-floor is the "Rotunda," believed to be the largest in the world, which measures 110 ft. in diameter and 67 ft. in height. Here business of a direct character is transacted between the public and the Authority. The Rotunda is reached from the main entrance through carved doorways, the doors being of oak with plate-glass panels in bronze grilles. Doorways from the main corridors are flanked with Corinthian pilasters between which are coupled columns of Subiaco marble, the walls between being panelled with the same material. An entablature encompasses the circle of columns and pilasters, and forms a basis for the dome. The beautifully modelled freize of symbolical figures and of festoons is a most attractive decoration. A great dome forms the roof, and the fine lighting from the lantern in the dome is a successful feature. Over each main doorway is placed a relief panel of the head of some famous navigator. There are stairs here leading to the basement.

There are open office blocks, 5 stories in height, containing the offices for the staff. Corridors pass down the centre with rooms on either side, and the short corridors connecting the office blocks with the great circle have walls lined with polished marble. On both sides of the main entrance loggia are the two main staircase pavilions. Each staircase is built around a well, and the walls and piers are covered with polished marble. The short corridors connecting the office blocks with the great circle have the walls lined with polished marble. The ceilings of groined vaulting are modelled in low relief.



THE CTHER ROOMS Lord Devonport, the Chairman of the Port of London Authority, has a small suite of rooms. The walls of the first two are treated with oak, while those of the chairman's room are covered entirely with French walnut in quartered panels, exhibiting a delightful blending of patterns and tones in the grain. The pilaster treatment is Corinthian, and here are limewood carvings, the wood so favoured by Grinling Gibbons. The fireplace is of polished steel, and marble forms the border, which is fitted with a walnut mantel. This has a running frieze which suggests seaweed, and which also has a symbolical significance. The centre panel of the ceiling is vacant. Heads of gods and goddesses appear in the corner spaces, and the arms of the P.L.A. occupy the centre of each end space. The measurements of the chairman's room are about 34 ft. by 17 ft. Four cut-glass pendants supply the light, and a radiator in a bronze grille, as well as a fire, provide warmth. The board room is situated on the second floor immediately over the main entrance hall, and extends the full width of the portico. Over its three doorways are modellings in high relief; in the centre the arms of the Port of London Authority, on one side is the head of his Majesty the King, on the other her Majesty the Queen. This is the only part of the building where distinct colour exists.

The board room is about 60 ft. long by 38 ft. wide, with a height of 30 ft. to the ceiling. The walls are panelled for a height of 18 ft. with quartered walnut. At distances around the walls, conforming to the general unit of measurement, are placed coupled Corinthian pilasters, fluted and reeded. All

deep chestnut colour, and designed in a plain style. Comfortable chairs are placed in convenient positions, and the floor is covered with a pile carpet. A series of committeerooms are panelled in oak, and each is designed in a different style—Doric, Corinthian, and Ionic. The corridors are here made attractive by their simple yet harmonious treatment. Some are lined with the polished Subiaco marble, above which is the plastered and moulded ceiling; others are finished with a beautiful creamy enamel. Throughout the building great attention has been paid to the planning of the corridors, their heating, lighting, and ventilation. Every part affords easy access to rooms, departments, and staircases. The floors of the building are of ferro-concrete, covered with a finishing material of marble or polished oak blocks. There is a dining-room for members with electric heating apparatus at one end, and in an alcove at the other end is a circular table for visitors. There is a long oak dining-table. The oak work in this room and in the smoking- and writingroom harmonise with the treatment in the rest of the building. There is a plentiful array of medallions in the latter room on which famous men of the past, such as Hogarth, Newton, and Inigo Jones are portrayed in low relief.

The exterior of the building consists of a solid base of granite with a facing of Portland stone. This presents a creamy colour which, with the mellowing of time, will gradually change to a dull grey, similar to that of many of the City churches. In the interior work lavish use of marble has been made; in the corridors, entrance hall, rotunda, staircases, and throughout the building generally the principal wood



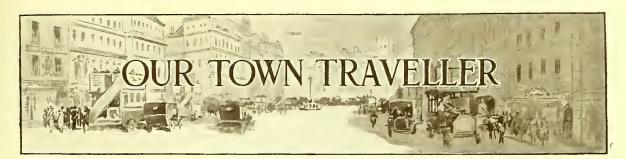
Pho'o]

PORT OF LONDON AUTHORITY'S NEW BUILDING. SEEN FROM THE AIR

[Central Aerophoto. Co.

the carvings in this room are of lime-tree wood. On the centre line of each pair of pilasters is a carved trophy symbolical of the Port and its associations. On the ends of the room are "Commerce" and "Navigation," "Arctic" and the "Tropics." Between the windows "Australia," "Africa," "Canada," "India." Springing from the main cornice is the coved and panclled ceiling. The walls of the library are lined with large raised and moulded oak panels. A ceiling of white plaster, moulded and partly enriched, contrasts with the wall panelling. The bookcases in the room are mahogany to

employed for the panellings, etc., is oak, the counter at the rotunda, for example, being a massive furnishing in this material. The handsome walnut clock in the centre of this apartment is another attractive feature. Of the beautifully ornate plaster work, metal work, and enamel work, it is scarcely possible to do more than mention how admirably all these subsidiary processes fit in and form no insignificant part of the whole building, which so thoroughly reflects the importance of that great undertaking the Port of London Authority.



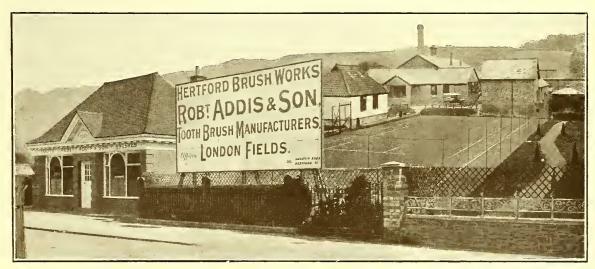
THE heading "Our Town Traveller" first came into regular use in The Chemist and Druggist in 1890, but the idea of the section goes back further—to the earliest years of the paper's history, in fact, when expeditions to well-known works gave rise to articles that still have their interest. The guiding principle of the "Town Traveller" notes is that they are first-hand impressions gained by a C. & D. representative in an actual visit, and in recent years the connotation of "town" has been extended so as to include manufacturing centres in many parts of the country. This year "O.T.T." has again ranged over a fairly wide area.

#### How British Tooth-Brushes are Made

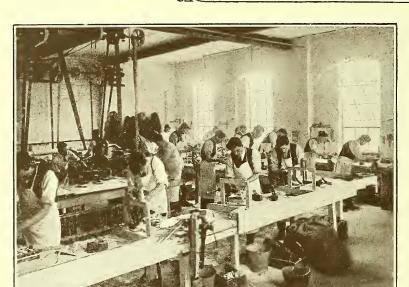
From London Fields East to Hertford is no great distance so far as mileage goes, but the change is not one to be calculated by yard-measure. It is something of an achievement to have transported works and work-people from a crowded industrial centre to a delightful spot in the country and to have preserved the rural amenities of the district. And this is, in fact, what Robert Addis & Son, of the London Brush Works, have done. The spacious grounds at Hertford are fast assuming a gay appearance as work in the garden progresses, and the employees, before arriving at their appointed places in the buildings, pass a fine tennis court and a football or sports ground to remind them that their employers have practical ideas on the old adage about Jack and his work, ideas which can only remain dreams in London. I went to Hertford, however, not to rhapsodise on rural beauties, but to see how British tooth-brushes are made. First of all, let me state that William Addis made the first tooth-brush in 1780, and to-day his descendants continue the manufacture, which has been maintained in an unbroken line ever since. Some of the employees, too, have followed their fathers as makers of tooth-brushes, and in one shop father and son can be seen working busily side by side. A guess at the number of processes that go to make a tooth-brush would, in the

majority of cases, be an under-estimate. My own certainly was. At least 40 people handle every brush that passes out of the Addis Brush Works-a fact which ought to be a good selling point for the retail chemist who likes to handle British With Mr. Addis as my guide, we started at the point where the thigh bones of bullocks are cut by means of powerful circular saws. Skill is essential in obtaining the requisite number of strips from each bone, and it is of interest to note that only one of the prophylactic shape registered by Messrs. Addis can be obtained from each bone. The other strips, of course, form the ordinary brushes. From this room the sections of bone are conveyed to the fashioning room. Here the work is deftly done by hand, after the preliminary outlining on a milling machine. The shaping by hand is one of the most expensive processes in the shaping of an English tooth-brush, from eight to ten minutes' hard work being expended on each handle. Girls at ingenious boring machines take up the process and make two to three different types of perforations—the holes for the bristles, the hygienic holes, and the end hole by which the prophylactic is suspended when not in use. One type of machine drives the holes diagonally or in any other desired position. The saw cuts in the back to join up these holes have next to be made. This is a delicate operation, for too much of the saw means the chances of a split in the holder. Mr. Addis informed me that no brush has ever been returned in this condition, a record of which he is pardonably proud. And now it is time for the grease-removing, bleaching and washing department, where the handles acquire their whiteness. In this department the handles, degreased and bleached, are placed in churns with the necessary polishing material and water and whirled round for two days. A final polish precedes the last stage in the life of the handle as a separate unit.

The bristles arrive in bundles, and are sorted by hand into blacks, yellows, and whites. The blacks are, of course, rejected and sent to another branch of industry. The white bristles are almost silvery at one end. A habit of some of the foreign brush-makers was explained to me here. It is to put all the silvery bristles on the outside of the brush, the



THE EXTERIOR OF THE HERTFORD BRUSH WORKS.



THE FASHIONING ROOM WHERE THE BONES ARE SHAPED

result being a very white-looking article. An observant customer may imagine this type to be more desirable than the usual English-made brush. The truth is that the silvery roots have microscopic barbs, which exercise a pull over the smooth end, and ultimately the bristles come out. English manufacturers balance this pull by placing the silvery bristles alternately inside and out. The result is the brushes are not so white, perhaps, but their expectation of life, as the insurance people say, is greatly increased. Bristle-drawing is mostly done in the workers' own homes, which thereby become workshops "within the meaning of the Act," and are subject to inspection by the local authorities. The handles and bristles are weighed together before and after they are united, and payment is made to the workers on delivery. The importance of bristle-drawing as a rural industry is eloquently conveyed by the large batch of insurance cards which I saw awaiting attention. There are some other workers, however, engaged in the factory, and I was able to appreciate the speed at which the bristles are gathered and pulled into position. Silvered wire is used throughout,

thread being inferior in lasting properties, as can be well imagined. Enamelling the back is next in order, enamel, so far as Addis brushes are concerned, replacing the wax of an earlier day. After a period of three days for hardening, the excess is scraped off. The brushes are then trimmed by machine, in single or multiple rows at a time, this depending on the brush; there is a final trim by hand, a careful examination, and then the imprint is affixed. A further polishing precedes the last washing in water, soap, and disinfectant, which is a most thorough process. A unique drying-room. sections of which are pulled out on wheels, thus obviating the need of a worker entering a hot chamber, prepares the way for the packers who get the brushes ready for distribution to all parts of the world.

I have tried to show briefly how well British tooth-brushes are made, with every precaution from a hygienic point of view insisted upon. One wonders by way of contrast under what conditions bristles are drawn in the Far East. The principal anxiety in this country has been shown concerning foreign shaving brushes, but Mr. Addis is not at all sure

that tooth-brushes can be exempted from the possibility of carrying infection, not only as regards anthrax, but other diseases. Judging from the output one would conjecture that tooth-brush users the world over are thinking about these matters and insisting upon having Britishmade goods. At any rate, there is no slackness to be found in this industry at Hertford, where mass production yields every week tooth-brushes in thousands.

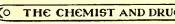
#### THE MAKING OF CLINICALS

Desirous of learning something about clinical thermometers, I called on G. H. Zeal, Ltd., 77 St. John Street, London, E.C. The business was first established by Mr. G. H. Zeal in 1888, and for many years the process of manufacture was carried out at the works at 82 Turnmill Street. But owing to the increase in output the premises were outgrown, and Messrs. Zeal were obliged to move to their present address, 29 St. John Street, where they have acquired a spacious factory equipped with all the latest machinery and devices. Mr. Zeal, sen., was on a trip round the world. But I was received by his two sons, who, escorting me across the overhead bridges that

connect their offices with the works, showed me how the well-known Zeal clinicals are produced. The manufacture of a clinical falls conveniently into two parts—first the actual making of the thermometer, and second, the grading and the marking of it. Part one of the work was proceeding in the first room I visited, which I could see was well lit from the roof and had plenty of air space. The workmen seen in the illustration (p. 963) are engaged in making the whole instrument. This, Mr. Zeal explained, is part of the policy followed to maintain production at the high level demanded for the Zeal instrument. Each workman is thus held entirely responsible, and, at the same time, he is less likely to suffer from the monotony of working continuously at one small operation. The tubing in its familiar semi-opal condition comes in lengths to the workmen, who cut it in the prescribed size. A specially hardened glass is joined to the base of this section, and I watched the new piece, in the skilled hands of the workman, aided by an intensely hot blow-pipe fitted to each bench, gradually take shape as the bulb of the thermometer. A tiny globule of mercury is inserted in the



DRILLING THE HOLES FOR THE TOOTH BRUSH BRISTLES

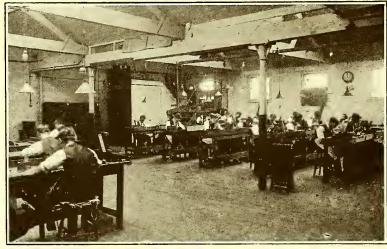


bulb, which is afterwards sealed. Now the instrument is passed rapidly through the flame and inverted in a vessel of the liquid metal which, as the glass cools, rises and fills the tiny channel and the bulb. The most difficult operation, as can well be imagined, is the making of the little bend in the tube which breaks off the thread of mercury. The top end is sealed and the clinical thermometer is ready for testing. This is carried out in a separate shop by skilled workmen, whose duty it is to locate any slight errors so that no thermometers are sent to be graduated that are not perfect in every way. There are electrically heated hot-water baths in the next room, which are maintained at an equitable temperature by mechanical stirrers, and here the thermometers have readings marked at several points as a guide to the mechanical device for the intermediate markings, which really deserves to be described by that overworked adjective "wonderful." But before they reached

this machine they are covered with a wax preparation. Further details (figures, lettering, etc.) are marked on the clinicals by another machine operating on the principle of

a pantograph upon a dozen at a time. Etching is carried out in a fume cupboard, and, with the removal of the wax, the blackening in of the etched markings, the details of the manufacture are complete. But before the thermometer reaches the dainty individual box of the packer it has to undergo further tests for accuracy and reliability. When these are successfully negotiated the instrument is allowed to pass to the user with the name of Zeal on it as a guarantee, that was and is still accepted as a hall-mark wherever clinicals are used. After what I was able to see, it was no surprise to learn that some thousands of clinicals are turned out here every week, and the fact that the pre-war output is to-day doubled speaks well for the quality of Zeal instruments. Clinicals are notoriously shortlived articles, not, of course, because of any fault of the clinical. But, because they are so easily broken, the short-sighted policy of some users is to buy clinicals on price alone, and thus to open the way for imported articles which may be worse than useless. The necessity of accuracy in the taking of a temperature need hardly be emphasised, but it is a

point which retailers of British instruments made by such firms as Messrs. Zeal should not lose sight of. Special mention should be made of the "Repello" clinical, which is one of



MAKING CLINICAL THERMOMETERS

Messrs. Zeal's patents. It is not a new instrument by any means, but the simplicity of the arrangement and the ingenuity must be my excuse for bringing it in here. By

pressing the glass bulb at the top (see diagram) the clinical can be instantaneously set. No shaking down is needed, a process which perhaps too often ends the life of the clinical with tragic suddenness. Several medals and awards have been made for this clinical, including a silver medal at the International Medical Congress in 1913, Messrs. Zeal's latest addition to their inventions is the "Acello" Resetting Clinical Thermometer Case. Two or three revolutions of this case will reset the most obstinate clinical without the slightest effort or risk of breakage. The "Acello" Case should be welcomed by members of the medical profession. Another elever device peculiar to the instruments of this firm, and intended to aid the unaccustomed user of a lens front, is a square mark superimposed on the line of mercury. In case it may be thought that Messrs. Zeal do nothing else but clinicals, I hasten to add that an array of bath, incubator, and many other types of thermometers were laid out for my inspection, all of which are made with that careful attention to each stage of their construction which has earned for Messrs. Zeal the abstract and

material joys of business life-namely, commendation and repeat orders. Mr. G. H. Zeal, Chairman of the Directors. is at present on a commercial tour in the far East.



THE "REPELLO." (Note the Bulb at the Top.)

#### Perfumery of Distinction

Among the very few shops that may be said to stand under the shadow of Buckingham Palace, that of Parfumerie Barranger, which is No. 34 in the road to which the Palace gives its name, attracts the passer-by in virtue of a striking window. Piled-up masses of complexion cream, looking like helpings of some elaborate soufflé, defy the combined effects of solar and atmospheric influences, while trays of variously-tinted powders and bath salts evince the unfailing judgment of a skilled window-The showroom—I had almost written salon-with its artistic showcases and its "vials full of odours," reinforces the impression made by the window; and it was not surprising to learn, in conversation with M. Georges Barranger, that Parfumerie Barranger products are appreciated by Princess Mary Viscountess Lascelles and other members of the Royal family. I was quickly to discover, however, that this perfumery house is the



THE THERMOMETER GRADUATION ROOM

home of liberal discounts—a feature that one does not always associate with toilet products. I also found, to my surprise, that the firm is enthusiastic in the introduction of novelties, not doling them out as a theatre manager doles out an occasional new play, but actually making ceaseless experiments with the specific object of evolving something to which the epithet "new" can justly be applied. As its name suggests, the House of Barranger is of French origin; but it has the advantage over many Paris houses that it manufactures in this country. The importance of this circumstance to the firm's customers here is considerable. It means, obviously, quick transit; and beyond this is the fact that Parfumerie Barranger puts up any customer's own specialities with his own labels, imparting to them that indefinable distinction of style which only the expert, and in particular the French expert, can attain. As a fact, chemists are writing from various parts of the country to the effect that Barranger goods are creating a standardin other words, that they are a distinct asset to business. I had the pleasure, during my chat with M. Barranger, of examining some of the newer specialities of his firm-perfumes, creams, powders, and bath salts-and among these I

was especially struck by the enterprise shown in devising water softeners. There is a linen bag, for instance, filled with a powder which can be squeezed out in the bath, reducing the hardness of





Two Styles of Packing in Nausicaa Sels Aromatiques

the water and leaving the bag for use as a flesh glove. Then there is a powder that leaves the water slightly milky when used in the proportion of 1 oz. to 15 gals.: the price of both these novelties is quite moderate. The bath salts, too, are surprisingly good value, ranging up to the guinea size (about  $\$^1_2$  lb.), with a glass cup-measure supplied with or (in the larger sizes) in each bottle. From bath sachets the eye ranges over complexion tints to lip salves; these are made in seven shades, and at approximately a third of the average price of other standard makes. An initial stamped in relief prevents surreptitious use, and the smartness of the case designs leaves nothing to be desired. Emphasis may be given to the range of goods in stock by mentioning that the watch-shaped lavender water or eau-de-Cologne retailing at 2s. 6d. looks a relatively large bottle. M. Barranger, who is supported by a courteous staff, has price lists available on request.

A DUTY of 14.50 crowns per kilogram is levied on illustrated catalogues imported into Czecho-Slovakia.

STREET TRADERS' INCOMES.—Speaking at Learnington on June 11, Mr. Alexander MacLaren (National Federation of Retail Newsagents) said that he knew of one street vendor in London who made over £2,000 a year. Another street seller in Portsmouth made well over £1,000 a year, and similar instances occurred in many cities.

#### New Books

Newham, H. E. C.—The Port of Hull Annual (1923). 12 by 9½ in. Pp. 72. 3s. 6d. net. Issued at the office of "Hull and East Coast Trade and Transit," Bishop Lane, Hull. [This book contains a survey of the commercial activities of Hull, mostly in the form of illustrated articles, including the vegetable oil trade, of which Hull is the largest centre in Great Britain. There is also a classified list of imports and exports from and into Hull, with comparisons.]

Dorveaux, Dr. Paul.—Les Pots de Pharmacie. 9 in. by 6 in. Pp. 89. Librarie Marqueste, Toulouse. [The issue of a second edition of Dr. Dorveaux's monograph on pharmacy pots is evidence that the first has been widely read. Dr. Dorveaux, who is honorary librarian of the Faculty of Pharmacy of Paris, gives in concise form an attractive outline of his subject, with the addition of copious footnotes, Fourteen admirably printed plates illustrate the work, about half of which is occupied by a dictionary of inscriptions compiled by the author.]

Income Tax, 1842-1924. 11½ in. by 6½ in. 10 pp. on folding card. Sixth edition, 1s. Oliver & Boyd, 33 Paternoster Row, London, E.C. (and Edinburgh: Tweeddale Court). [The first edition of this tabulated presentation of a complicated subject was published in 1918. The historical portion, which occupies only a page, may be passed over by anyone not sufficiently interested; the tables that follow are full and lucid, giving a good idea of the many pitfalls in the process of claiming the relief to which one may be entitled. The unfortunate income-tax payer who is compelled, through no fault of his own, to try conclusions with his local officials, cannot be too well-informed; and this is the kind of chart that he should study.]

Kingzett, C. T.—Chemistry for Beginners and Schools, with glossary, 4th Edition. 7 in. by 4½ in. Pp. 237. 5s. Baillière, Tindall & Cox, 8 Henrietta Street, London, W.C. [Mr. Kingzett published the first edition of this book during the war as a contribution towards the reconstruction of the country. It was intended to interest pupils and grown-up persons in chemistry and to enable them to appreciate the enormous importance of the subject in national affairs. In a subsequent edition the author added a section dealing with chemical apparatus and experiments, in which illustrations were given where required. In the present (4th) edition this section has been placed before the glossary and index, and in comparing the matter we find that a good deal of revision has taken place. The changes are all in the direction of making the book more interesting and more suitable for the purpose in view.]

Mercury Ores.— $8\frac{1}{2}$  in. by 5 in. Pp. 101. 5s, net. John Murray, Albemarle Street, London, W. [This monograph is one of a series on mineral resources issued by the Imperial Institute, in amplification and extension of those which have appeared in the "Bulletin." Mr. Edward Halse, A.R.S.M., Mlinst.M.M., Scientific and Technical Department, Imperial Institute, is the author of the work, which conveys in three chapters practically all that is known regarding the occurrence, characters and uses of mercury ores. Spain and Italy are practically the only two countries which count in the supply of mercury, the Almaden mine in the former country being the most important and one that produces nearly one-third of the world's supply. Since the contract with the Rothschilds expired in 1921, the mine has been managed by an autonomous council appointed by the Spanish Government, which by royal decree fixes the price of the metal. The Idria mines in Carniola, formerly part of Austria, passed definitely into the possession of the Italian Government in 1920, and the average annual production is estimated at 1,038 metric tons. The United States ranks third as a producer, but the output in 1921 (about 470,000 lb.) was the lowest recorded, and the outlook is regarded as unfavourable for expansion. The British Empire produces no mercury in payable quantities, but deposits exist in Canada and New Zealand, which may event ually prove profitable. The world's production at the present time is about two-thirds of the normal pre-war amount, and consumption is even lower than it was.]



THE Ruabon district may be described as a bit of industrial Lancashire that has strayed into a beautiful Welsh valley. The works of the Graesser-Monsanto Chemical Works, Ltd., are not actually in Ruabon, but in another village known as Acrefair (pronounced Ack-r-vy-r), about three miles distant. This village climbs the slopes of the Dee Valley within five miles of Llangollen, and is therefore in the midst of scenery whose fame is deservedly world-wide. Fortunately, the turns and twists of the valley hereabout are such that outside a radius of a mile or two nothing can be seen of the smoking chimney-stacks, the assortment of factories, the slag-heaps, the mean domestic architecture, or the railway sidings which mark Acrefair.

On entering the works through the main offices, yet another incongruity—this time a pleasant one—is seen. The visitor imagines himself to be, not in the vestibule of a manufacturing company's offices, but in the entrance-hall of some old English mansion; the walls are panelled in dark oak, and here and there are antique dressers displaying old china, beautiful

chests, cupboards, tables and chairs that were in active service three or more centuries And the board-room is modelled upon some ancient dining-hall; here again, is oak panelling, curious old oak chests and cupboards, an old-type "bucket" fire-grate set in a wide sandstone hearth, and, most interesting of all, a long, massive, sixteenth-century oak table whose beauty, one fears, is purchased at the cost of convenience. Under the same roof, are found the central offices and the experimental and research laboratories. Through the latter I was conducted by the head chemist, Dr. A. W. Titherley. A number of chemists are paid to do nothing but research work, and they are constantly making discoveries of both scientific and economic impor-

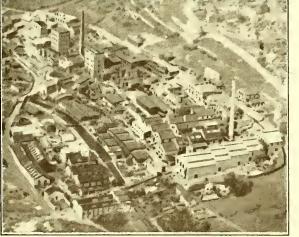
tance. An immense task falls to the laboratory staff. Apart from research, and from other work to which reference will be made in a moment, there are an enormous number of tests to be made. Not only is the purity of every final product established for every batch prior to its being put on the market, but tests are also made at many intermediate stages, so as to bring every process under complete control at practically every point. The procedure which ensures that all goods leaving the works are up to the required standard is, briefly, as follows: The particular batch—sometimes representing only a small proportion of the total output during a given interval—is numbered, and tests are made. The results are recorded with the following instructions:—

No finished product to be released for storage or consignment out of works till certified as O.K. on this form. This form with properly labelled sample of lot from Manufacturing Dept., must be sent, signed by the Process Chemist (or foreman), to the Chemist in Chargo of the Analytical Dept., and by him to Superintendent of manufacture.

The form used for recording the results comprises an analytical report together with details of the amount, the date, and the department from which the sample comes. This form, now filled in, is submitted to Dr. Veillon—one of the directors—who decides whether, in view of the data received from the chemist, the given batch is fit for sale or whether it shall be returned for re-treatment. Not till his signature approves the batch is it allowed to leave the works.

But let us return for a moment to the laboratories. Let us suppose that it is desired to manufacture a new drug or chemical compound, or an old one by a new process. The exact conditions are worked out in the experiment laboratory, and the substance—call it X—is made in quantities of a few grams or ounces in the ordinary glass apparatus of the "lab." So far, good. But it does not necessarily follow that if you can prepare 5 grams of X with ease and full success, you can prepare a pound, or five pounds or ten, at one operation. For example, an operation may be carried out successfully in glass apparatus and be impracticable in metal plant; and

new problems may arise over such questions as filtration heating, cooling, and so forth, when large quantities are exchanged for small. Hence, the next step is to prepare a pound or two at one time of X, and, before proceeding further, to make certain that thoroughly satisfactory operation is secured. done, there is another step before the manufacturing scale is reached, and that is, the making of X in semi-manufacturing quantities. semi-final step takes place in the technical laboratories. The chemical compound is now made-if possible-in, half-hundred-weight quantities. It does not invariably follow that manufacture on this scale is possible; the attempt may break down, and either the



THE GRAESSER-MONSANTO WORKS FROM THE AIR

expensive production on a small scale is resorted to, or the making of it entirely dropped. But if manufacture in the technical laboratory is carried out satisfactorily it is assumed that unlimited wholesale manufacture is possible, and plant of any desired size is erected. There are two technical laboratories, one devoted to operations in which a naked flame is not permissible, as where volatile, inflammable or explosive substances are concerned; and the other in which the ordinary methods of heating are employed. Close to the laboratories is the sample-room, whose importance arises from the fact that here are stored for two or three years' specimens of every product put upon the market. Every batch is numbered, and the sample numbered in the same way. Should any question arise as to the purity of a product, the sample can be interrogated as to the justice of the indictment. Only when, after the lapse of an interval of, say, two years, there can be no longer any possibility of dispute arising, is the sample removed. Questions having a legal bearing might conceivably be settled by an appeal to the appropriate sample.

#### PHENOL AND CRESOL

Far and away the chief raw material dealt with by the works is "crude carbolic acid," and the first step is to "fractionate" it—i.e. to separate out its many constituents, not always completely, by fractional distillation. For this purpose twelve cylindrical stills are employed, each eight feet in diameter, and thirty feet long, each holding about forty tons of the crude acid. The heating agency is superheated steam. Time was when furnaces supplied the necessary heat; and there are to be seen the old stills, now of course disused, with their attendant furnaces. If "erude carbolic" is practically the sole raw material, the most important finished article is pure phenol; and it is upon this product that the makers take particular pride. It is seen in two physical varieties—ice crystals and detached. It is sent out in zinc cylinders, each containing 3 cwt.; and

I was shown a warehouse holding hundreds of such full cylinders. The Pharmacopœia which insists upon the greatest purity for phenol is that of Japan, which specifies a meltingpoint of 40-41° C as against 39-40°C. of the B.P. The Graesser-Monsanto phenol's m.p. is 40.3-40.7° C. I myself saw dozens of 3-cwt. drums filled with phenol, whose m.p. was  $40.7^{\circ}$  C.! The m.p. of each drum is taken—not simply each batch — so strict is the watch which is kept upon all outgoings. During the war the demand for phenol was so great that natural sources were found to be inadequate. When all the "crude carbolic acid" which could be obtained had been distilled, there was still a shortage. Therefore it became necessary to manufacture phenol synthetically. Benzene

was the starting-point, and sulphonic acid the intermediate product. The process may be epitomised as follows:-

$$C_6H_6 + H_2SO_4 \rightarrow C_6H_5 \cdot HSO_3 + KOH \rightarrow C_6H_5 \cdot OH.$$

To-day the demand for synthetic phenol has vanished, and a whole factory lies idle. Close by is another factory which, working to its full capacity during the war, is now eloquently inactive; it was used for the production of pieric acid.

The next process I refer to is one which is as fascinating, and even thrilling, to the scientist, as it is arid and meaningless to the layman: I mean the separation of the three homologues of cresol,

$$\mathrm{C_6H_4} {<_{\mathrm{CH_3}}^{\mathrm{OH}}}$$

The preparation, each in a pure state, of ortho-, meta-, and para-cresol is a matter of considerable difficulty and of great commercial importance. It is no secret that the method employed at the Graesser-Monsanto works is a well-kept trade secret! The importance of obtaining pure homologues is this, that each is the starting-point in the preparation of dyes, and that the ortho-, only when pure, yields a definite tint, the meta- and the para- other definite tints; results which are impossible in the absence of the pure homologues. The scientific reader will be interested to hear what the company themselves have to say in the matter:-

Until recently the only commercially pure cresol on the market in any quantity was ortho-cresol, which has been manufactured by us since 1905. Moderate quantities of para-cresol and meta-cresol were available only from Germany, of a comparatively low grade of purity, and pure meta-cresol was practi-cally unknown except in small quantities used for laboratory research. Owing to extensive researches in our laboratories, undertaken with the object of finding a satisfactory commercial solution of the difficult problem of separating the three cresols in a pure condition from their admixture in coal tar, we can now offer these compounds in very large quantities in a degree of purity hitherto unknown in the chemical world. Thus, what

has previously been regarded as pure meta-cresol, freezing at 4° C., or thereabouts, really only meta-cresol. .  $\mathbf{m}$ T III The true freezingpoint of chemically pure meta-cresol [is] 12.0°C. Owing to the depressant influence of moisture on the freezing-point the cresols, which are very hygroscopic, it is important to observe that all references to freezing-points are based on the assumption that exposure to moist air is excluded. . In regard to the enormous uses of mixtures of cresols disinfectant for purposes, it is important to note the different antiseptic activity of the three isomers. Or-tho-cresol has been shown to be the least active of the three in its bactericidal properties, and the most toxic; para-cresol occupies a midposition, and metacresol has much the 1. Private railroad siding and concrete water towers. 2. Administrative block housing the general offices, highest bactericidal property, as well as

chemical laboratories, engineering offices and private garage.

3. Suite of research laboratories.
warehouse.
5. Corner of power-house.
6. Packing vanillin

the lowest toxic effect. A 0.5 to 1 water is one of the per cent. solution of meta-cresol in pure safest and most efficient sterilising washes for application to the human skin.

The following table may be of interest:-CRESOL

- Ortho-		Meta-	Para-		
Appnee.	Solid, crystalline mass.	Colouriess liquid; becomes faint brown on keeping.	Crystalline solid; characteristic, mas- sive white crystals.		
S.G.	1.036 at the m.p.	1.034 at 20° C.	1.034 at 20° C.		
M.P.	29-31° C.	10.5-12° C.	32–34° C.		
B.P.	191° C.	202° C.	201-202° C.		
Colour	White — may discolour.	Colourless.	White.		
Odonr.	Fresh, not un- pleasant.	Pure, sweet, not unpleasant. Soluble (clear soln.) in all proportions of 10% caustic-soda solution.	Characteristic, sweet, pleasant.		

#### SACCHARIN AND VANILLIN

A large factory is devoted to the manufacture of saccharin. This is one of the latest additions to the works, and is arranged and fitted so as to embody the most recent devices and most convenient methods. In conjunction with it is an ice factory; at one point in the making of saccharin a low temperature is required. Statistics relating to the size and output of this factory are less impressive than the statement that it is capable of meeting the saccharin needs of the whole United Kingdom together with a substantial proportion of foreign demands. It is interesting to note that the structure of the building has to meet the requirements of the Government: the windows are heavily barred, like those of a prison; all modes of ingress and exit are guarded with heavy locks; the first stages of the manufacture are completely shut off from the final stages by a wall running from floor to roof, the intermediate product being passed through an aperature in the wall admitting of no human entry. The reader guesses why. There is an Excise duty of £5 10s, per pound on all Englishmade saccharin (and a higher duty still on the imported article), so that its unauthorised exit must be prevented by all reasonable means. Indeed, two revenue officers are always on duty inside the works, and they make accurate records of all the saccharin manufactured, and even keep an eye on the intermediate stages. It is of not less than 97 per cent. purity, and is 550 times sweeter than sugar. It is needless to describe the making of saccharin; apart from a few trade secrets of minor importance, the process is, broadly, as set forth in the text-books and may be thus epitomised:—

$$\begin{array}{ccc} C_6H_5\cdot CH_3 & \to & C_6H_4 {\overset{CH_3}{\underset{HSO_3}{\times}}} \to \\ & & & & & & & & \\ & & & & & & & \\ & & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ &$$

Soluble saccharin (conforming to the U.S.P.) is also made, and this is, of course, simply the sodium salt of saccharin made by the interaction of the latter with sodium carbonate. Its formula is :-

$$C_6H_4 \left\langle \frac{SO_2}{CO} \right\rangle N \cdot Na + 2H_2O = 241$$

Interesting and important, too, is the manufacture of vanillin, the active constituent of the vanilla bean pod (Vanilla planifola). It is m-methoxy-p-oxy-benzaldehyde,

I was permitted to see the process. Vanillin is synthesised from eugenol, and the source of the latter is the clove. First of all cloves are distilled. The resulting oil of cloves, which is mainly eugenol, is converted into isoeugenol, which is then exidised to form vanillin. It was interesting to trace it through its preparation and then through the stages of purification. It is sent out in packages of sizes varying from one to twenty-eight pounds. The chemistry of its preparation may be thus summarised :-

$$\begin{array}{c} \text{OH} & \text{(4)} \\ \text{CH}_3 \cdot \text{O} & \text{(3)} \end{array} \\ \text{C}_6\text{H}_3 - \text{CH}_2 \cdot \text{CH} : \text{CH}_2 \rightarrow \begin{array}{c} \text{OH} \\ \text{CH}_3 \cdot \text{O} \end{array} \\ \text{Eugenol or allyl gualacol.} \\ \text{Isoeugenol.} \end{array}$$

 $_{\mathrm{CH_3}}^{\mathrm{OH}}$   $_{\mathrm{C}_{6}\mathrm{H_3}}^{\mathrm{C}_{6}\mathrm{H_3}}$  – CHO.

Vanillin.

The quantity of vanillin made at the Graesser-Monsanto works is very considerable.

#### OTHER FINE CHEMICALS

Of greater general interest, it may be, is the manufacture of salicylic acid, ortho-oxybenzoic acid-

Commercially it is an article of great importance, and it is fitting that a large space be devoted to the making of it. A minute description of what I saw of the various stages of its manufacture is not called for. Suffice it that the usual mode of preparation is, in the main, adopted. Sodium phenate is saturated with carbon dioxide under pressure, when sodium phenocarbonate is formed,

$$C_6H_5 \cdot O \cdot CO_2Na$$
.

The pressure is maintained and the temperature raised to 130° C., when sodium salicylate is formed. By this method the whole of the phenol is converted to sodium salicylate. (The alternative method, wherein sodium phenate is heated in a current of carbon dioxide, results in the conversion to salicylate of only half the phenate, the remaining half distilling over as pure phenol.) Given sodium salicylate, the preparation of the acid by precipitation with acid is a simple matter. Summary:-

How interesting it is to find that the pure ortho-compound is formed by these methods; there is no admixture of the meta- or para-acids (which, indeed, are difficult to prepare, and

are simply laboratory curiosities).

Even most laymen would find the making of lysol an absorbing thing to watch. It is a disinfectant which has beaten all competitors off the field, so cheap is it, so safe to handle, and so well adapted to a wide variety of uses, from the cleansing of drains to the sweetening of the human mouth. The Graesser-Monsanto lysol is called Acrosyl, and it resembles other brands in being essentially a mixture of cresols in soap solution. But it differs from other makes in one important particular. We have already seen that the most desirable of the cresols for antiseptic uses is meta-cresol; it is the most powerfully germicidal and it is the least toxic. Now it is claimed that this particular lysol contains a larger proportion of meta-cresol than any other variety; indeed, its manufacture is a process specifically designed to this end. Doubtless, when the properties of meta-cresol are fully realised, still higher percentages will find their way into lysol. Acrosyl contains 50 per cent. of cresols.

Of no smaller general interest or commercial importance is aspirin, great quantities of which are turned out. Descriptive details of the mode of manufacture are not called for. The process, in the main, is set forth in the text books; and whatever variations there are, the company's own secrets are not likely to be divulged here! Suffice it that aspirin is made by the interaction of salicylic acid and acetic anhydride, under heat, in a reflux condenser.

$$\begin{array}{lll} 2{\rm CH_3 \cdot COOH} & \rightarrow & \stackrel{{\rm CH_3 \cdot CO}}{{\rm CH_3 \cdot CO}} {\rm O} + {\rm C_6H_4} {\rm COOH} \\ & \rightarrow & \stackrel{{\rm CH_4 \cdot COO'CH}}{{\rm COOH}} \\ & {\rm Acetic\ acid.\ Acctic\ anhydride +\ Salicylic\ acid.} \end{array} \rightarrow {\rm C_6H_4} {\rm COO'CH} \\ & \rightarrow & {\rm C_6H_4} {\rm COO'CH$$

Here, as elsewhere, it is the company's ambition to produce an article of unimpeachable purity, and its boast that no better aspirin can be obtained. In fact, the magnitude of the demand for aspirin—which is, perhaps, the most popular remedy of the day—is one reason why special interest is taken in it by the firm, and no pains spared to produce a compound likely to meet with universal favour. Of the remaining products manufactured at Ruabon, a mere enumeration must suffice. They include (but are not exhausted by) the following: Acetanilide, allantoin, amido-phenol, anthranilic acid, aurine, chlorphenols, chloreresols, chloramine-T, coumarin, naphthalene, nitrophenols, nitrocresols, pitch, pyridine, salicylates, trichlor-meta-cresol, soda and zinc para-phenol-sulphonate (sulphocarbolates) and intermediates for dyes.

#### INGENIOUS ARRANGEMENTS

A few additional features call for brief mention. A central station supplies super-heated steam for the whole works' requirements. In being piped to the various factories there is surprisingly little loss of heat, of which great furnaces, mechanically stoked, are the sources. The flue gases circulate around pipes filled with water, which is thus raised to boiling point before being converted into super-heated steam by the heat of the furnace itself. An automatic system of brushing removes soot from the water-pipes which would others Le be thickly coated within an hour. A beautiful others lee be thickly coated within the flue gases for piece of apparatus automatically analyses the flue gases for H H

carbon dioxide content, and records the percentage in ink on a revolving drum. Similarly, a central power station, eontaining many gigantie dynamos, elaborate switch-boards, and all the usual paraphernalia of such places—the whole looking delightfully clean and neat-supply electricity for all the many demands of the works. But the most ingenious thing of all is surely the company's private system of automatic telephoning. Each of the thirty principal offices can automatically ring up any other; the head chemist can be "put through" to the chief of the bottle-washing department, say, without the intervention of a human operator. But that is not all. Suppose the head bottle-washer to be out of his office-let us say he is at the canteen. The head ehemist, by means of this remarkable telephone, can still get in touch with him wherever in, or about, the works he may-On each of the four corners of the roof of a high central building is a loud-sounding klaxon-horn. The head chemist is enabled by his telephone to sound a call simultaneously upon the four horns, and this call is heard by every worker wherever he may be. Now each head of department has a particular code-call assigned to him; two long blasts followed by one short means that the head bottle-washer is wanted. He hears the eall, downs his glass, rushes off to the nearest telephone-station, and is automatically connected with the horn blower. The saving of time is enormous, and the system would seem to be infallible. The present writer was being shown over the sports pavilion by one such head of department when the horn sounded, and my companion interpreted the call as his own; he was soon in touch with the department requiring him. One long call on the horn signifies fire; and the particular factory on fire is indicated by the number of short calls following the long one. (But that is not a daily occurrence!)

#### HISTORY

It only remains to outline the history of the firm. It wasfounded in 1867 by the late Robert Graesser, who immediately took a partner in Mr. Timothy Crowther. This partnership was dissolved in 1873, and the firm's title became simply Robert Graesser. The works were first erected to produce paraffin oil and paraffin wax from the shale refuse of the neighbouring collieries. American competition made the economic production of these substances impossible, and their manufacture was dropped. To this seemingly adverse circumstance is due the development and present prosperity of the company. The decay of the paraffin industry led to the search for new activities, and it was decided to distil crude carbolie acid for the production of pure phenol and cresylic acid. So successful was the venture that by the year 1887 the works were producing not less than 50 per cent. of the world's consumption of pure phenol! Aurine was also manufactured, but its consumption received a check upon the introduction of aniline dyes; it is, however, still in limited demand for certain special purposes. Picrie acid was also manufactured for dye purposes, and the discovery of its explosive nature led to the framing of regulations so stringent as to its removal from place to place that the practicability of its output was seriously threatened, and might, indeed, have been extinguished had not those very explosive properties been grasped and their possibilities realised. First of all, Continental countries employed it for war purposes, and then Great Britain. The lyddite used in the Boer War came in very large measure from these works. It is to the lasting credit of Robert Graesser that he set himself the task of producing not simply a cheap phenol but one of great purity; the m.-p. (the indication par excellence of purity) rose from 35° C. to 40.7° C., while the price fell from twelve shillings to ninepence per pound! Developments went well ahead, and in the midst of them, in 1911, Robert Graesser was found dead at his desk in the works-such an end as he would have desired. His son, Norman Hugo Graesser—yow the managing director—ruled in his stead. In 1915, a private limited company was formed, styled Robert Graesser, Ltd. Succeeding developments may be gathered from the foregoing sketch, and it is unnecessary to dilate upon the demands new and old put upon the works by the great war. In 1920, there took place an amalgamation of the British interests of the St. Louis, U.S.A., firm of the Monsanto Chemical Works, and the new company was styled the Graesser-Monsanto Chemical Works, Ltd.

#### Cosmical Chemistry

Professor A. S. Eddington, F.R.S., in a discourse at the Royal Institution, London, recently, dealtwith many points arising out of the measurement of the angular diameter of the giant star Betelgeuse with a 20-foot interperometer by Professor A. A. Michelson at Mount Wilson observatory. The astronomical multiplication table is: a million earths make one sun; ten million suns make one Betelgeuse. The vast bulk of the star is perhaps fifty times as heavy as the sun, its inflated substance being more tenuous than air, whereas the sun is denser than water. The marginal temperature of Betelgeuse is some 3,000° C., and its internal temperature 2 to 20 million degrees. Temperature is a mode of describing the speed of motion of the ultimate particles of matter. Helium atoms at ordinary temperature travel rather less than one mile per second; at 4,000,000° C. speed would be 100 miles per second. This is high speed, but insignificant with the 100,000 miles per second in radio-active disruptions. The heat of giant stars is divided into this material energy of atomic motion and also attential heat of ather wayse the correction and also attential heat of ather wayse. motion and also ætherial heat of æther waves, the energy of which is so intense inside a star that it makes a strong wind and distends the star. The masses of matter of the universe are aggregated primarily into units ranging from ½ to 5 times the mass of the sum. Gravitation is the force condensing matter, and ætherial pressure. is the main disruptive force preventing accumulation of large masses. All over the universe the stars bear witness. that gravitational aggregation proceeded to a point at which this opposing force eame into play and became too strong for it. As a gaseous star contracts its temperature will rise (to red, yellow, then white heat) until its density is a quarter to a third that of water when the summit is passed and temperature falls. Stars begin to shine at 3,000° C., and return to this temperature at the close of their luminous existence. Massive stars get hotter than light stars (sun's temperature 5.900° C. (maximum 6,600° passed), Sirius, two and a half times heavier, is at hottest stage 11,000° C.). Inside a star vast numbers of electrons (unattached units of negative electricity) dash about with hundredfold higher velocity than the atoms. On the supposition that temperature is high enough to break away all satellite electrons from the elements the average weight (or molecular weight) of the ultimate particles would be about 2. Generally about half the electrons are detached and the molecular weight is between 3 and The brightness of a star depends upon the rate at which heat is leaking out, and it is the obstructive power or opacity of the atom which dams back this power or opacity of the atom which dams back this radiant flow. Capella (a double star of mass 4.2 times the sun and luminosity 160 times greater) has an absorption coefficient of 150 C.G.S. units for its brighter component. A slab of its gas 6 inches thick (at atmospheric density) would only allow  $\frac{1}{\sqrt{10}}$  the radiant energy falling upon it to get through. The absorption of energy in its target of the star of wars length and giant stars is nearly independent of wave-length, and does not show rapid change as in terrestrial experiments. This would appear to be due to difference in the rate of the repair of atoms disrupted by absorption of energy. This is rapid in the laboratory but difficult in a star where the positive nucleus is the electron trap for the capture of the electron which runs into it full tilt—a much rarer occurrence.

The store of heat in a star would run down in a few thousand years unless replenished from a source now believed to be sub-atomic. Helium is made from hydrogen (how is not known) and some 0.8 per cent. of the mass of hydrogen disappears, and must be the mass of energy (æther waves) liberated when the change occurs. Æther waves are li the energy available from this source is colossal. Æther waves are light and

CHEMICALS AND ALLIED PRODUCTS exported from the United States during the first quarter of 1923, according to preliminary reports, registered an increase in value of 17 per cent. over the corresponding period of 1922. These increases ranged from 19 per cent. in medicinal and pharmaceutical products, to 130 per cent. in wood and denatured products and also included coal-tar products, paints, and perfumery and toilet preparations.

#### Practical Notes and Formulas

Temperatures under this heading are on the Centigrade Scale.

CLEANING ALUMINIUM VESSELS

Seligman and Williams, before the Institute of Metals, dealt with the cleaning of aluminium utensils. Aluminium, they state, is not attacked by water-glass solutions or by hot soda solution containing a little sodium silicate. Attack by a 5 per cent. soda solution is immediately arrested by the addition of an amount of sodium silicate equal to 1/100 of the soda. Satisfactory detergents consisting of a mixture of soda and sodium silicate are articles of commerce; among them are "Carbosil," "Pearl Dust," and "Aquamol."

#### GLYCERIN SUBSTITUTE

A German pharmacist (" Pharm. Zeit.," November 15, 1922) suggests the following substitute for glycerin for cosmetic uses: 25 grams of neutral soft soap (or any other neutral soap) is dissolved in 300 grams of distilled water and the mixture heated to a little over 40° C., 150 grams of arrhydrous wool fat is added, and as soon as the wool fat has melted the whole is well mixed by shaking. This yields a creamy emulsion, to which is added, in small portions, 700 grams of distilled water and 100 grams of glycerin. The whole is then shaken until cool.

ELIXIR LACTATED PEPSIN

Granulated pepsin, 1-3,000	5 oz. 372 gr. (Av.)
Sugar	10 lb.
Benzoate of soda	1 oz.
Lactic acid	8 fl. oz.
Glycerin	1 gal.
Flavoring mixture	2½ fl. dr.
Carmosine (water soluble auiline)	1 dr.
Water to make	

To make the flavoring mixture mentioned above, take:

Oil of orange (terpeneless) ... 1 dr. Oil of lemon (terpeneless) ... 2 dr. Oil of nutmeg ... ... Oil of aniseed ... ...

... 2 dr. m. 7½
... 2 dr. m. 15
... 2 dr. m. 15
... 3 dr. m. 22½ Oil of lemongrass ... Citral ... ...

The elixir is prepared as follows: The oils are thoroughly rubbed up with some talc, then the carmosine and benzoate of soda are added; incorporate this mixture with 10 lb. sugar; mix well. Next add lactic acid, pepsin. and about 3 gallons of water, and stand for twelve hours. Filter to 4 gallons and add the glycerin. ("Amer. Journ. Pharm.")

PICTURE CLEANING

Prof. A. P Laurie recently delivered a lecture at the Royal Academy on the preservation and cleaning of pictures ("Nature" 110, 710). He pointed out that the question of the preservation and cleaning of pictures is not a purely scientific one, but involves certain æsthetic considerations, and he suggested that there has been some confusion of thought on the whole subject. A picture might have certain flakes of paint off it, and yet be otherwise in good condition, and in such a case it would probably be considered necessary to restore the absent pigment. Here, however, we get upon purely æsthetic ground as to whether such a restoration is justifiable. In order that the general appearance of the picture con-veyed to the observer what the artist intended, it is necessary to replace the defective part, but from the point of view of the minute and careful student of the picture, it is essential that such replacement should be known. This difficulty can be overcome by taking photographs of the picture before repair, so as to put on record what is the work of the master and what is the work of the restorer. While not prepared to give a final opinion as to the safest methods of cleaning, Prof. Laurie suggested that where alcohol is used castor-oil should be laid on the surface with a soft brush, and then a mixture of castor-oil and alcohol dabbed on with a soft brush, and removed by diluting with turpentine and sopping up with a large dry brush. Where alcohol is not a sufficiently powerful solvent copaiba balsam emulsified with ammonia might be used, a preparation of copaiba balsam thinned with a

little turpentine being laid on the surface first. If any friction is to be applied it should be done with a soft rubber point, and at every stage examined under a powerful magnifying glass. No important public picture should be cleaned until it has been authorised by a committee of experts, and the cleaner himself should be present and explain exactly what he is going to do, while everything he does should be under the direct supervision of the head of the public gallery.

#### EXTERMINATING WARBLE FLIES

Experiments and observations on the life history and methods of exterminating warble flies are dealt with by Carpenter, Phibbs and Slattery (Jour. Dept. Agric. and Tech. Instr. for Ireland), who mention that the most satisfactory dressing is made by mixing 1 lb. of fresh quicklime in a gallon of water and steeping 3-4 lb. of tobacco powder in the limewater for twenty-four hours. Strain through muslin, and apply the liquid to the backs of the cattle. The treatment should be repeated at least four times between February and May. Nicotine in solution proved less effective than this preparation. Injections into the warbles killed a fairly high percentage: Salt and glycerin (saturated), 68½ per cent.; tincture of iodine, 67 per cent.; tannic acid (10 per cent. in alcohol), 63 per cent.; copper sulphate (7 per cent.), 61 per cent.). Copper sulphate solution of this strength used as a wash killed 15-30 per cent., and tincture of iodine rubbed on killed only 32 per cent. Sulphur dioxide gas applied under pressure to each warble is the most effective exterminator, but difficulties of applying it on a large scale seem to preclude its use. Gases liberated under impermeable covers spread over the animals' backs do not give such good results, the best being 662 per cent. of maggots killed by chlorine.

#### MUD PACKS

The following formulas have appeared in different American journals recently :—

> Kieselguhr 60 gm. ... Borax Borax ... Menthol ... ... ... • • • gm. 0.05 gm. 0.05 gm. Oil of neroli ... Oil of rose 0.05 gm. ... ... 25 Glycerin ... ... ...

Distilled water q.s. to make a paste of required consistence.

Sol. hydrogen peroxide ... 4 oz. Witch hazel ... ... Tinct. benzoin ... ... ... 14 oz.  $\begin{array}{cc} \frac{1}{2} & \text{OZ.} \\ \frac{1}{2} & \text{OZ.} \end{array}$ ... Spirit of camphor... ... 4 oz. Fuller's earth ....

The beauty clays are said to be either Fuller's earth or kaolin and Kieselguhr. These clays are generally made up with starch, paste, mucilage of tragacanth or a greaseless cold cream. Some contain magnesium sulphate, and all show presence of borax and magnesium carbonate. The following is reported to be the approximate formula for a well-known article :--

Borax Powdered tragacanth 40 . . . Magnesium carbonate 20 . . . ... Carmine trace Carmine ... ... Benzaldehyde ... ... ... trace

Witch hazel can be incorporated with advantage into these beauty clays as its astringent qualities will give actual benefit. Kaolin made into a paste with glycerin and about 1 per cent. acetic acid makes a very good application for the removal of comedones, or blackheads as they are commonly called. Perfume may be added. The parts affected are plastered over with the paste at night and allowed to remain on until morning, when it may be easily removed. Warm water and soap is then used, and the skin dried gently with a soft towel.

At the recent Islington (London) Industrial Exhibition a stall was taken by Bishop's Pure Drug Co., chemists, Holloway Road, N., who have been in the borough for thirty-one years.



POR the second time London offers her hospitality to pharmacists of all nations, come from the four corners of the earth to discuss the broader issues affecting the profession, matters of import to each and all, albeit in varying degree, and which, therefore, constitute that bond,

the community of interests, which links all Galen's disciples, jealous and proud guardians of the high traditions of their time - honoured mystery and craft. Of late, international conferences, whether ending in complete accord or total disagreement, have been shorn of much of their former glamour, and in the mind of even the least sceptical of British chemists the very natural questions arise: What have the preceding eleven Congresses achieved for pharmacy, what advantages did the profession derive from the meeting in London fortytwo years ago; and, what is the purpose and aim of the forthcoming assembly? It is true that our insularity is also reflected in the exercise of our calling, and many subjects of vital importance to vast numbers of our foreign confrères make no direct appeal to us, since the conditions from which they arise do not exist in our pharmaceutical system, and, conversely, they are not concerned with many our problems.

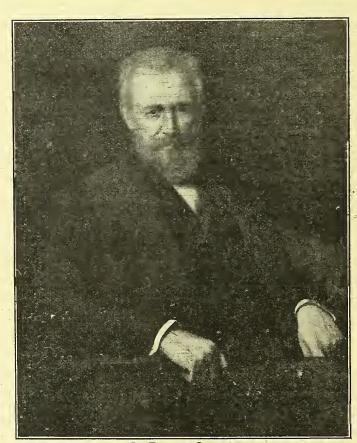
These considerations, however, offer no justification for questioning the usefulness of an international gathering of pharmacists, for the points of common interest, representing the greater issues, far outnumber and outweigh those of a more domestic character. Even in these, the unbiassed point of view expressed in discussion by impartial participants cannot but prove beneficial, apart from bringing the interested and non-interested parties into closer touch and better mutual understanding. Our far-flung Empire, with its numerous points of contact with other nations, our worldwide relations, claim imperatively an active participation in an assembly convened not merely to discuss professional matters, but having for its ultimate object the advancement of science and the welfare of ailing humanity. We

must not overlook the fact that of recent years the introduction by many civilised nations of certain social measures—National Health Insurance—has had a far-reaching effect on the exercise of pharmacy, creating new economic conditions, and bringing in its train a host of new factors. Owing

to the common foundation upon which most of these measures rest, the economic basis of pharmacy has been almost universally modified and fresh problems of material importance have arisen, differing but slightly on either side of national frontiers, in the solution of which, therefore, all pharmacists are equally interested, as all are affected in some measure by the altered conditions in the supply of medicine to a very large section of the population.

THE FIRST CONGRESS Ex Oriente lux .-August 16, 1865.—The ninth national congress of French pharmaeists was in progress in Rennes, when the proceedings were inter-rupted by a stranger claiming to be the bearer of a special mission. He presented a document in a strange language, which two of the members present recognised as being German. It set forth that the bearer, Dr. Björklund, a pharmacist of St. Petersburg, had been entrusted

Schroeders, President of the Pharmaceutical Society of St. Petersburg, with the mission to travel throughout Europe as the delegate of a committee which had been formed to organise an International Congress of Pharmacists. In the name of this committee he was empowered to approach the various professional associations in different countries in order to invite their participation in this meeting, where it was proposed, for the first time, to bring together pharmacists of several nations with the object of affording an occasion for an exchange of views on matters of common interest. The minutes of the session report that the surprise was great, and certainly the almost dramatic circumstances in which the invitation was tendered to the pharmacists of the Second Empire assembled in the ancient capital of Brittany warrant



Dr. THEOPHILUS REDWOOD,
Who was President of the International Congress at the last meeting in London
From an oil painting in the possess on of the Pharmaceutical Society of Great Britain



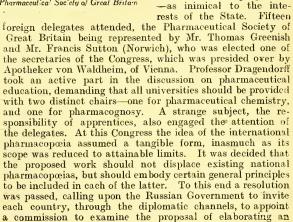
this description of the effect it must have produced. We find no record of Dr. Björklund having visited Great Britain on his mission; whether he hesitated to cross the Channel or whether the boom of Admiral Sir Charles Napier's guns still sounded in the ears of our St. Petersburg confrères are matters for conjecture. However, the idea materialised, and the First International Congress of Pharmacists met the same year, on September 16, 1865, in Brunswick. At this assembly, Austria, France, Russia, Sweden, North and South Germany were represented, Herr Dittrich, a pharmacist of Prague, being elected President. The social status of pharmacy was one of the three principal subjects put down for discussion, and although fifty-eight years have since elapsed, there is a strangely-familiar ring in the decision, carried unanimously, that in order to raise the standard of the profession, examinations should be made more stringent, and further, that pharmacists should be called upon to participate to a greater extent in the administration of measures relating to public

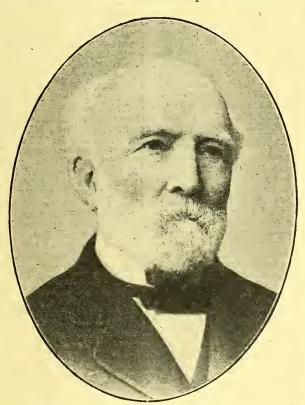
health, the complaint being general that members of the profession were passed over in the allocation of offices which their training and experience rendered them particularly fit to fill. The idea of a universal pharmacopœia was warmly applauded, but, although destined at a later date to prove the tangible result of succeeding Congresses, this proposal formed the subject of a purely academic discussion. But the burning question of the day, a question which has lost nothing of its capital importance during the intervening years, and still figures as the chief grievance of our Continental confrères, one which also closely affects British pharmacists, although approached from a different point of view, was, and is, the problem of dealing with that class of remedial agents designated as "pharmaceu-tical specialities." In fact, it is now no secret that the original object of the pro-moters of the first Congress was to decide on ways and means of suppressing all pro-prietary preparations. The prietary preparations. The violence of the language used by the delegates in the discussion on the repression of specialities is explained by the recognition of the detrimental influence on orthodox

mental influence on orthodox prescribing which the growing use of such preparations was bound to exert, and in this respect this point has gained rather than lost in acuity. "Delenda est Carthago," exclaimed one member in referring to this class of goods; "Pharmacists are invaded and oppressed by specialities, as if their learning and prudence were inadequate to accomplish the noble mission of assisting in alleviating suffering humanity"; "Pharmacists were now reduced to the humble rôle of retailers of drugs which they have not themselves compounded"; these diatribes, uttered fifty-eight years ago, have lost none of their force and express the views still held, perhaps even more strongly, by thousands of pharmacists. It will be seen from the foregoing that the subjects under discussion at the first Congress are still to the fore to-day; they constitute fundamental social, scientific and economic questions awaiting a satisfactory solution, and being of common interest emphasise the necessity for an exchange of views on a broad basis. The Second Congress was held in Paris, on August, 21, 1867.

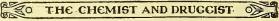
Sixteen nations were represented by delegates, including Egypt and the United States; Professor Proctor (U.S.A.), being elected Vice-President. The Honorary President was Senator Dumas; a South German pharmacist, Herr Rieckher, occupying the presidential chair. The social status of the pharmacist and his professional duties were discussed, but the chief topic of the meeting is summarised in the final resolution: That the sale of secret remedies and specialities, as well as all advertisements of medicines in newspapers, should be rigorously prohibited. For the first time recreation and social functions were included in the programme at the Third Congress, which met in Vienna, September 9 to 11, 1869. This was attended by over 200 delegates, including, for the first time, representatives of British pharmacy in the persons of Mr. H. Sugden Evans (President of the Pharmaceutical Society) and Professor Redwood. Apotheker Dankwortt, of Magdeburg, presided over the meetings, at which professional education figured as the chief subject of

discussion, the necessity of creating special schools of pharmacy being stressed. The idea of elaborating an international pharmacopæia was again mooted, while the preponderant influence exerted by medical men in matters affecting the pharmaceutical profession was condemned in a resolution declaring "medical supredeclaring "medical supre-macy in the regulation of affairs between the State and pharmacists to be not in consonance with the position of pharmacists." In addition to a dinner, the delegates enjoyed a trip into Styria, on the recently-opened Semmer-ing railway. St. Petersburg was the venue of the Fourth Congress, which was held there on August 13 to 18, 1874, after permission had been granted by the Russian Government to hold the meeting on condition that one of the subjects on the agenda be dropped. To-day, when the pharmacy recently installed in Moscow by the American Red Cross is in charge of a woman, it is hard to realise that the Russian Government considered a discussion on the question whether women should be admitted to pharmacy—the subject which had to be deleted from the programme





MR. THOMAS GREENISH,
Who was President of the Pharmaceutical Society at the last London meeting of the International Congress of Pharmacy
From a photograph in the possess on of the Pharmaceutical Society of Great Britain



international pharmacopæia on the following bases: Adoption of the decimal system, and of the Latin language for the text; uniform nomenclature; exhaustive descriptions of official drugs; determination of a fixed minimum content of active principles in toxic drugs; simple formulas for galenical preparations; maximum permissible limit of impurities in official chemicals. The reading of scientific papers introduced a new feature in this Congress.

#### THE LONDON CONGRESS

The Fifth Congress met in London, from August 1 to 3, 1881, and was a brilliant social success. The meetings were held in the rooms of the Pharmaceutical Society, in 17 Bloomsbury Square, Mr. Thomas Greenish being the President of the Society. Professor Dr. Theophilus Redwood was elected President of the Congress, at which two subjects were discussed at considerable length: the international pharmacopæia being one; and the other a question destined to find its final practical solution and universal application twenty-one years later-viz., standardisation of the strength of official preparations containing potent drugs. In London the idea of an international pharmacopœia was combated as being Utopian, and while the enthusiasm of its more ardent sponsors was considerably damped by the cool reception it received, the fact remains that the critical and eminently practical point of view brought to bear on this proposal, resulting in extracting the kernel contained in the original idea, the real factor of vital importance to prescribers and patients alike, served the purpose of concentrating attention on a very serious matter, i.e., the divergencies in strength of potent preparations bearing identical designations. It was Mr. Hampson particularly who urged that attention should be confined to the realisation of the attainable—the standardisation of potent drugs—whereby he emphasised the facts brought forward in a highly interesting communication on this subject presented by Mr. Peter Squire. As a result of the discussion which followed it was resolved to appoint a commission to prepare a compilation of the data necessary to insure equalisation of all potent preparations, and also to secure the adoption of a uniform systematic Latin nomenclature in all pharmacopœias. The modus operandi of revising the pharmacopœia in different countries also came under discussion, in the course of which the British members had to confess that in the compilation of this work officially the collaboration of chemists was excluded, and a resolution was carried demanding that pharmacists should be adequately represented in the various national pharmacopæial commissions. Further, the question of the professional currieulum was also debated. At this Congress the first award of the Hanbury Medal was made, the recipient being Professor Flückiger. The medal was presented to Dr. Brunnengräber as representing the eminent pharmacognosist, who was unable to attend on account of ill-health, in the presence of Mr. Daniel Bell Hanbury. The London Congress of 1881 is remarkable for the outstanding fact that a definite demand was formulated for the standardisation of preparations of potent drags, a postulate destined to find its consummation in what is known as the International Agreement, signed in Brussels in 1902.

#### THE INTERNATIONAL PHARMACOPEIA

The Sixth Congress met in Brussels, from August 31 to September 5, 1885, under Royal Patronage, the King of the Belgians being High Protector, while the Government lent the Palais des Académies for the meetings. Several foreign Governments were officially represented, and nearly 300 delegates had been nominated to attend. The proceedings were opened by the Belgian Foreign Minister, several ministers and civic authorities being present, signal distinctions imparting for the first time an official cachet to the work of the Congress. M. Van Bastelaer was elected Acting-President. A Constantinople pharmacist, M. Joseph Zanni, read the first paper, devoted to an attack on specialities, accusing Europe and America of flooding Turkey with an avalanche of pro-prietary medicines. A variety of subjects were discussed, inter alia, the limitation of pharmacies, the sale of morphine, and the preparation of chemicals by pharmacists in their own laboratories. Herr Von Waldheim presented the draft of the proposed International Pharmacoposia, incorporating 293 drugs and preparations, and reproduced in The Chemist and DEUGGIST, 1885, page 569. In the discussion which followed,

Mr. Greenish urged that the activities of the Congress should be confined to securing international standards for potent remedies, instead of attempting to enforce a universal pharmacopæia. The question of pharmaceutical education loomed largely in the discussions, and the proposal was made to induce the universities to confer a new degree, that of Doctor of Pharmacy. "The Times," in reporting upon the proceedings of the Congress, took pharmacists severely to task for presuming to elaborate an international pharmacopæia, adopting the attitude that a work of this description is no concern of pharmacists, physicians being the sole qualified arbiters in this matter. However, the "Thunderer" graciously permitted the knights of the pestle to discuss the question of the potability of water—a reference to a paper read on this subject. Even 'Punch" poked fun at some of the, at the time, rather extravagant demands made at the Congress in regard to educa-

tional standards for pharmacists.

After Brussels, 1885, a reaction set in. During the end of the last century interest decidedly waned, and the three succeeding gatherings were, from a practical point of view, frankly failures. It was intended to hold the Seventh Congress in Milan, in 1888, but this proposal had to be abandoned, since the attention of Italian pharmacists was then wholly engaged with domestic matters, modifications in the pharmacy law being under discussion. A suggestion to meet in Prague was also dropped, whereupon the idea was taken up in 1890 by the American Pharmaceutical Association. Under its auspices a congress was held in Chicago on August 21 and 22, 1893, under the presidency of Professor J. P. Remington. France, Germany, Italy and Russia did not participate; Great Britain was represented by Mr. Carteighe, Mr. W. Martindale and Mr. N. H. Martin. The international pharmacopæia, as a standard for potent drugs only, pharmaceutical education, and proprietary medicines were discussed. At this assembly Mr. Carteighe presented the Hanbury Medal to Professor Maisch. The Eighth Congress met, again, in Brussels, on August 14 to 19, 1897, Professor Ranwez being President. Great Britain was not officially represented. At this meeting pharmaceutical specialities afforded the pièce de résistance, many speakers preaching a crusade against this class of goods and urging their entire suppression. A new factor, which rendered them still more obnoxious in the eyes of our Continental confrères, had, in the course of time, associated itself with their sale-price cutting, a feature particularly prevalent in the Latin countries. Several papers were read, and, for the first time, a medal and a diploma were presented to each of the three successful authors of communications seut in for competition, one being Mr. W. A. Wrenn, F.C.S. (Taunton), for his paper "On the Value of Chemica! Standards Applied to the Analysis of Essential Oils." That magnetic attraction, the Paris International Exposition of 1900, afforded a fitting opportunity to hold the Ninth Congress of Pharmacy, which met in the Ville Lumière, August 3 to 8. The sessions were held in the School of Pharmacy, M. A. Petit presiding over the meetings. The two delegates appointed by the Pharmaceutical Society of Great Britain did not attend, but British pharmacy was represented, unofficially, by Mr. S. W. Woolley, Mr. Wrenn and Mr. Wyatt. The members assisted at the unveiling of the monument to Pelletier and Caventou, and also at a reception held by President Loulet

#### THE INTERNATIONAL AGREEMENT

At this Congress the scope of the international pharmacor wia was whittled down to a really practical and acceptable project: A commission was appointed to prepare a table showing the differences in strength of official medicinal preparations bearing the same name in different pharmacopæias, with the object of securing uniformity through the adoption, in all pharmacopæias, of uniform standards for these preparations. A resolution was passed, to the effect that the Belgian Government should be requested to invite the Governments of other countries to send delegates to meet at a Conference in Brussels for the purpose of introducing these standards on a uniform basis in the several national pharmacopæias. At last, after forty years' work, the project of an international pharmacopæia, not the original proposal of a universal standard, but an eminently practical partial realisation of the fundamental idea, was established on a definite basis by a diplomatic agreement. At the invitation of the Belgiau Government, the representatives of eighteen Europeau eountries, and also of the United States, met in Brussels from September 15 to 20, 1902, Great Britain being represented by Dr. (now Sir) Donald MacAlister, Chairman of the Pharmacopæia Commission, and Surgeon Lieut.-Colonel Reid (India). The standards and formulas decided upon at this International Conference for the Unification of Potent Medicines were adopted, with certain reservations, by Great Britain, and embodied in the British Pharmacopæia of 1914.

#### THE BRUSSELS CONGRESS

Ten years elapsed before pharmacists once more met in an International Congress, the Tenth, in Brussels, on September 1 to 6, 1910. Over 500 members participated in this gathering, at which the Pharmaceutical Society was represented by Mr. Edmund White and Mr. E. S. Peck; the meetings being held in the Palais des Académies under the presidency of M. Derneville. The Congress was opened by the Governor of the Province of Brabant, on behalf of the Belgian Government. The International Pharmacopæia having, in part, entered the realm of reality, various practical questions were discussed, foremost among which figured the necessity of establishing standard methods of assay for drugs and medicinal prepara-tions, and also of standardising the reagents used in analytical work. Instead of fulminating against pharmaceutical specialities, this question was handled in a practical spirit, the Belgian delegates putting forward the scheme of the Nationale Pharmacentique, at present in force in that country and known by the names of National Codex and Réglementation, for securing the maintenance of fixed sale prices and controlling the composition of proprietary medicines—an important point, since in most Continental countries the pharmacist, and not the manufacturer, is held responsible, but which has now lost much of its purport in consequence of recent legislation requiring the disclosure of the formula, and in some countries, registration of all compounded medicines. Trade-marks and patents in their bearing on medicines, the limitation of pharmacies, and pharmaceutical representation on pharmacopœial eommissions, were among the other subjects which came up for discussion. Numerous scientific papers of considerable interest were read, among which may be cited "Biochemical Research on Glucosides," by the late Professor Bourquelot; "Pepsin Assay," by Messrs. Maben and Hercod, while MM. Perrot and Goris described a method of extracting the enzymes present in plants by alcohol, permitting the "stabilisation" of certain drugs and their official extracts, by inhibiting the action of these ferments on the active principles. At this Congress a suggestion was advanced which was destined to alter the character of future meetings. Up to the present the Congress had lacked continuity owing to the absence of a permanent council, and the work of organising each gathering devolved on the pharmaceutical corporations of the country in which each Congress was held. MM. J. J. Hofman and R. Schoepp, in the name of the Netherlands Society for the Advancement of Pharmacy, proposed the establishment of a central bureau, with an executive body, based on an International Association of Societies of Pharmacy, a proposal supported by the Dutch Government. "The International Pharmaceutical Federation," to give it its title, was definitely organised in 1912, having for its aim "the promotion of pharmacy either as a profession or applied science along international channels." The Federation embraces a large number of pharmaceutical associations in different countries, including the Pharmaceutical Society of Great Britzin, and has its central office in The Hague, Heer J. J. Hofman being its general secretary. It is this new organisation which arranges the international meetings of pharmacists, no longer officially termed Congresses, but designated more modestly as an "international meeting of the societies which are members of the International Pharmaceutical Federation.

#### THE LAST CONGRESS

A world-war and ten years separate us from the last—the Eleventh—Congress, the first organised by the Federation. The Hague Meeting, held in Scheveningen and Leyden, September 17 to 21, 1913, will be remembered as having been from every point of view unquestionably one of the most brilliantly successful of the whole series. The Congress was under the patronage of Prince Henry of the Netherlands, while the President was Professor Dr. L. van Itallie, the proceedings being formally opened by

the Dutch Prime Minister. Over 400 delegates attended; eighteen Governments, including Great Britain in the person of Mr. Edmund White (President of the Pharmaceutical Society), were officially represented. The interest taken in the Congress in this country was reflected in the strength of the British contingent, which included Professor H. G. Greenish, Messrs. H. Finnemore, J. W. Harvey, T. Maben, T. M. Maben, E. Saville Pcck, G. H. Pierson, W. J. U. Woolcock, and S. W. Woolley, an imposing array compared with the scanty participation at previous assemblies. The wealth of scientific communications presented to this meeting, and particularly the range covered by the various subjects, afford a striking illustration of the change wrought in pharmacy in the course of fifty years. The advances realised in our knowledge, and what is more significant, the active participation of the pharmacist in the onward march of science, are apparent not only in the titles of the communications, but in the persons of their authors. Twenty-eight years ago pharmacists had been reproved for demanding a higher educational standard, for discussing the analysis of foodstuffs, and were sternly bade to mind their own business. What would the critics of those days, the zealous guardians of physicians' pretentions, have said had they been privileged to attend the Hague Congress after listening to papers read by pharmacists to pharmacists on such subjects as: "The Toxicity of Methyl Alcohol," "The Enzymes and their Importance in Pharma-Alcohol," "The Enzymes and their importance in Fraemacognosy," "Oxydases in Vegetable Drugs," "Variability of Drugs" (presented by Mr. E. Saville Peck), "Physiological Standardisation," "Oxalic Acid in the Organism," "The Synthesis of Glucosides by Ferments," "Pepsin Standard," "The Ferments of Animal Secretions?" Yet physiological testing and the action of enzymes are subjects which to-day are cognate to the "preparation of medicines." Mankind has benefited from the pharmacist's participation in the advancement of science, although there are doubtless some who, as in 1885, still feel inclined to regard such considerations as requiring "a totally different amount and kind of knowledge and practice from any which is needed for the preparation of medicines." Many purely professional matters were also discussed, views being expressed on such topical subjects as: International Pharmaceutical Nomenclature, Pharmaceutical Education, The Sale of Pharmaceutical Specialities, Military Pharmacists, Separation of Medicine and Pharmacy, Unqualified Assistants, Drug Tariffs, The Quality of Glass, Galenicals, and whether trade-marks should be granted for medicinal substances, Mr. E. White contributing a paper on this question. The extensive range of subjects which came up for discussion at The Hague—the Reports fill two volumes of 1,319 pages-illustrates the manifold problems connected with the exercise of the profession, as well as their increasing complexity. British pharmacists, in extending a hearty welcome to their foreign confrères, trust that history will record that the London Congress of 1923 not only strengthened the bond—the community of professional interests-which unites all members of the calling, but also, by affording a frank exchange of views, brought the individual members closer together, promoting a better understanding, and contributing materially to the solution of many outstanding problems.

#### Ideas

We invite contributions to this section,

I am working out an idea for a variation in the appearance of salines. An alternative is wanted to the eternal whiteness. Why should not a saline be tinted pink. I think the idea was attempted years ago by means of the addition of potassium permanganate. A trace of one of the harmless aniline dyes might answer. (13/6.)

Saponin or powdered solid extract of quillaia (I prefer the former) is fine stuff for use in pharmacy. Only a trace is needed for a hair restorer containing sulphur. If triturated with the sulphur before mixing with the liquids no difficulty is found in transfusing the sulphur in the bottle by a shake. Froth is raised, but is not, I think, a great disadvantage. (17/5.)

#### Safeguarding of Industries Act Formaldehyde

THE adjourned hearing of the complaint that formaldehyde has been improperly included in the Board of Trade list of dutiable articles under Part I. of the Safeguarding of Industries Act (C. & D., June 23, p. 883) took place at the offices of the Board of Trade on June 22 (int.) took place at the offices of the Board of Trade on June 22 (instead of June 21, as arranged), before Mr. Cyril Atkinson, K.C., the Referee. Mr. Kenneth Swan and Mr. R. Lambert Parry again represented the Chemical Merchants' and Users' National Vigilance Committee, by whom the complaint was lodged; Mr. Trevor Watson represented the Board of Trade, which opposed the application for the removal of formaldehyde from the list; and Sir Arthur Colefax, K.C., and the Hon. Stafford Cripps represented a number of manufacturers in this country who supported the action of the Board of Trade.

#### CROSS-EXAMINATION RESUMED

Mr. E. J. Parry, B.Sc., analytical chemist, was further cross-examined by Sir Arthur Colefax, who first took the example of phenanthrene, a hydrocarbon of coal tar. He believed that phenanthrene could be prepared synthetically in several different ways?

Mr. PARRY: I believe so. Sir A. COLEFAX: One way is to take dibenzil and pass it through a heated tube, and then phenanthrene is formed?

Mr. Parry: Candidly, I have not got the chemistry

of phenanthrene in my mind.

Sir A. Coleran put it to the witness that the formation of phenanthrene in the way he had just mentioned was a recognised synthetic method. This was obviously a synthesis in which there was a splitting off of hydrogen. Equally there might be a synthesis by the addition of hydrogen as well as by the splitting off of hydrogen, and in point he mentioned anthracene dihydrate, which he believed the witness could not question was a synthesis.

Mr. PARRY: Yes, I think it is.

Sir A. COLEFAX said that this was an example of the mere addition of a molecule of hydrogen to a complex molecule of anthracene, and this the witness had admitted was a synthesis.

The Official Referee said that this seemed to him

to be an important admission.

Mr. PARRY explained that there were undoubtedly a number of bodies prepared by reactions which were defi-nitely those with which the synthetic chemist had to do. He was proceeding to particularise, when Sir A. Colefax interrupted him by complaining that he was taking it upon himself to answer the Referee on questions upon which a skilled organic chemist alone could pronounce, and this, he understood, Mr. Parry did not claim to be. He went on to say that it was sufficient for his argument that the witness had tacitly admitted that both the operations he had instanced were synthetic-the preparation of phenanthrene on the one hand and the preparation of anthracene dihydrate on the other.

Mr. PARRY: I admit that both those are synthetic. Sir A. COLEFAX: The witness agrees, therefore, that whether it is a case of the abstraction of hydrogen as in phenanthrene from such a body as dibenzil, or the formation of anthracene dihydrate by the addition of hydrogen, the result must be equally described as

Mr. Parry: Yes, except that in the building up of phenanthrene by the first method you have got three or four synthetic stages before you get to dibenzil.

or four synthetic stages before you get to dibenzil.

Sir A. Colefax then took another instance, what he described as the perfectly simple synthesis of anthraquinone from anthracene, and he suggested that this formation synthetically was exactly on a par with the formation of the dihydrate. Mr. Parry agreed, with certain qualifications. Sir A. Colefax went on to ask as to exactly other hodies, whether they were not considered. certain other bodies, whether they were not grouped synthetically. Mr. Parry said that it had often been pointed out that the term "synthetic" was loosely used. There were perfumes, for example, which were called synthetic, but which properly ought not to have that designation.

Sir A. COLEFAX maintained that what was involved in the operations he had instanced was, as a matter of fact, the same kind of process as the passing from methyl alcohol to formaldehyde; it might be described as a mere oxidation process. He went on to take another example; malonic acid could be synthetically prepared, and would split off water. Was the splitting off of a molecule of water a synthetic process in the witness's view? Mr. Parry: I should not think so, Sir A. Colefax: Why not? Mr. Parry: It turns on the Colefax: Why not? Mr. Parry: It turns on the question of what is synthesised. I should call that simply an ordinary decomposition. Sir A. Colefax: Is it your view, then, that if water is split off, that prevents a thing being described as a synthesis? Mr. Parry explained that that was not his view. In a great many cases one element in the chain of reactions was such a splitting off. To illustrate his point, he instanced the preparation of phthalic acid, which he did not believe was a synthesis.

Sir A. COLEFAX: Your view is that that is not a

synthesis because something is split off?

Mr. PARRY: I suggest that in this case it is simply oxidation. Sir A. Colefax pressed his question, that in Mr. Parry's view the splitting off of something prevented synthesis, and Mr. Parry replied that he had already said several times that when the principle was involved, first, of something split off, and, secondly, of an ordinary oxidation process, this had been invariably distinguished from a synthetic process.

Sir A. COLEFAX: I challenge you to produce any

authority.

Mr. PARRY: I have already produced Wade's "Text-

book of Synthetic Chemistry.

Sir A. COLEFAX: Is that also the reason why you do not regard the formation of a carbon suboxide from malonic acid as synthetic?

Mr. PARRY: I think in that case you have so utterly

disintegrated the molecule that you could not possibly

call it a synthesis.

Sir A. COLEFAX: In Thorpe's work, under the heading, "Organic Synthetic Condensation," it is stated that the great majority of organic syntheses, especially when they start by the use of inorganic materials, consist in passing from simple to complex molecular grouping by the condensation process. To pass now to the principal matter, I believe the witness will agree that the reaction whereby the vapour of the methyl alcohol is passed over the heated catalyst, giving formaldehyde, is indicative of the constitution of the formaldehyde? Mr. Parry: of the constitution of the formaldehyde? Mr. Parry: Certainly. Sir A. Colefax: Directly you know that the methyl alcohol gives you formaldehyde, the constitution of the formaldehyde would leap to the eye of the chemist? Mr. Parry: That is quite a fair way of putting it. Sir A. Colefax: And, of course, it is an absolutely ordinary reaction? Mr. Parry: Subject only to an unimportant qualification, yes.

#### MR. PARRY RE-EXAMINED

Mr. Swan, in re-examining the witness, said that he wanted to elicit the witness's view more precisely with wanted to elicit the witness's view more precisely with regard to the various organic products which had been put to him by Sir Arthur Colefax. Sir Arthur had mentioned the preparation of phenanthrene from dibenzil. In that case, in the transition, there was a splitting off of hydrogen. Let it be supposed that the dibenzil had been prepared by a series of synthetic steps. The dibenzil was then, in the witness's view, a synthetic chemical? Mr. Parry: Yes. Mr. Swan: Does the splitting off of the hydrogen represent at all that characteristic? Mr. Parry: Not in that particular reaction. The dibenzil has been built up by a series of synthetic reactions. Where Richter gives a synthesis for a body like dibenzil that involves all that has gone before to get the dibenzil. Mr. Swan said that he gathered that when a body had been synthesised, and could be either synthetically produced, or obtained in its natural state, any subsequent reaction derived from that body was described in the text-books as synthetic.

(To be continued.)

#### Trade Report

The prices given in this section are those obtained by importers or manufacturers for huik quantities or original packages. To these prices various charges have to he added, whereby vaiues are in many instances greatly augmented hefore wholesale dealers receive the goods into stock, after which much expense may be incurred in garhling and the like. Qualities of chemicais, drugs, olls, and many other commodities vary greatly, and higher prices than those here quoted are charged for selected qualities of natural products even in huik quantities. quantities.

#### 42, Cannon Street, E.C.4, June 26.

Owing to technical reasons connected with the printing of this issue our Trade Report closed for press on Wednesday morning. Business during the interval has continued very quiet and the feeling in Mineing Lane produce circles is somewhat depressed in view of the decline in sugar and rubber. The few changes include an easier tendency in menthol. Camphor slabs are almost a dead letter; agar agar has been sold at a slight advance on the spot, and Belgian chamomiles are practically unobtainable until the new crop is available in about a month. Opium remains firm, with the Far East still a buyer in the primary market. Morphine salts have been advanced 6d, to 8d, per oz., and codeine and salts 7d, to 9d, per oz. Cod-liver oil has been in more demand and is firmer again. Acacia gum is slightly easier, and annatto seed is dearer.

Higher	Firmer	Easier	Lower
Agar-agar Annatto seed Codeine and salts Farina Morphine and salts Pitch	Acetone Balsam tolu Citronella oil (Jv.) Cloves, Zan. (forward) Cod liver oil Dextrin (Dutch) Geranium oil (Bourb.) Palm kernel oil Vetivert oil (Bourb., c.i.f.)	Almond oil (essent.) Aniline (oil and salt) Aspirin ('tric acid Coconut (desic.) Cottonseed oil Geranium oil (Alg., c.i.f.) Gum acacia Hexamine Menthol Rubber Sulphonal Turmeric	Betanaphthol Groundnut oil Linseed oil Maize starch powder Potash pruss. Rape oil Soya bean oil Turpentine

#### Cablegrams

New York, June 27.—Business is quiet. Menthol has advanced a further dollar to \$10.00 per lb. Taraxacum is dearer at 17c, and senega has advanced to 65c. Balsam tolu at \$1.25, Canada balsam at \$12.30 per U.S. gallon, and Oregon fir at \$3.40 per U.S. gallon are all higher. Wahoo (euonymus) bark is lower at 90c per lb.

#### Crude Drugs, etc.

AGAR AGAR is about 6d, per lb. dearer on the spot at 5s. 9d. for Kobe No. 1, and for June-July shipment 5s. 4½d. c.i.f. is quoted.

Annatio Seed is again dearer, and we understand 9½d. has been paid on the spot for good bright new crop Madras. Prices will no doubt advance later on as several big forward contracts have been defaulted on by sellers in both Jamaica and Madras.

Jamaica and Madras.

BALSAMS.—Tolu is dearer on the spot at 5s. 6d. per lb. The U.S. market is still advancing.

CANNABIS INDICA.—There has been quite a fair inquiry during the past few days, and up to 3s. 3d. per lb. has been paid for a few bags of good green African. Bombay tops remain unchanged at 17s.

CARAWAY SEED.—Dutch continue in small supply on the spot, but several shipments are expected from Holland in a few days.

CASTOR OIL.—French pharmaceutical is a shade firmer at 63s. per cwt. in cases, and 59s. in barrels, ex wharf London. Fine quality guaranteed genuine Italian is quoted at 81s. 6d.

Fine quality guaranteed genuine Italian is quoted at 81s. 6d., ex wharf.

ex wharf.

CHAMOMILES are now practically unobtainable and the nominal price is about 600s, per cwt. The first pickings of the new Belgian crop are expected to be available in about a month. The acreage under cultivation has been largely extended, and given favourable weather conditions the crop is expected to be good.

CLOVES have been steady, fair Zanzibar selling at from 11½d, to 1s. per lb. on the spot. To arrive, the sales include May-July shipment at 1s. 0¾d, to 1s. 0¾d, to 1s. 1d, per lb. o.i.i., being firmer. The weekly wharf statistics show 57

landed and 782 delivered, leaving a stock of 17,392 against 6,674 bales at the same period of 1922.

COCOA BUTTER.—Prime English is quoted at from 1s. 4½d. to

1s. 5d. per lb., as to brand and quantity.

Coconut (Desicoated) is slightly easier, fine selling at 43s, and medium at 43s, 6d. per cwt. on the spot. To arrive May-June shipment is offered at 40s. 6d., and June-July at 39s. 6d. e.i.f.

COD-LIVER OIL.—Our Bergen correspondent writes of June 22 that the catch of the Finmarken codfishery was also a fair one last week. The total output of all the Norwegian codfisheries, compared with that of previous years, is as follows:-

		Yield of	
	Catch of	steam refined	Livers for
	cod	cod-liver oil	crude oil
June 16, 1923	50,100,000	83,913 (Heet.)	17,100 (Heet.)
June 17, 1922	47,500,000	78,436	15,000
June 18, 1921	38,800,000	57,000 ,,	13,100 ,,
June 19, 1920	38,000,000	56,600 ,,	6'200 "
June 21 1919	29,000,000	35.000	5,000 "

A fair demand has suddenly set in and the market is firmer and sellers are now asking 104s, per barrel e.i.f. London for finest non-freezing, steam-refined quality. London agents also make the market firmer, and all reports from Norway maintain that we shall see higher prices in the autumn. The quantity of medicinal available in Norway is not large, and the calls for industrial oils continue to be the outstanding feature.

Gum ACACIA.—Usual Kordofan sorts are slightly easier, offering at 65s. per cwt., and cleaned at 70s. on the spot.

MENTHOL.—A few orders which came from the Continent at the end of last week were all executed at a shade under 39s, per lb., since when the market has been exceptionally quiet and has sagged to 38s. 6d. for Kobayashi-Suzuki on the spot sellers. On the other hand, the forward position remains very steady and sales have been made up to 38s. 6d. c.i.f. for July-August shipment. As the result of the accurate inside knowledge of the position of menthol given in our issue last week several important buyers have defeated their methods. ferred their purchases until they are actually wanting, and by this means they were able to prevent prices further advancing. Interested parties, however, state that the position quite warrants the prices they are offering to sell at, but with so highly speculative an article like menthol the future is uncertain.

OPIUM.—The primary markets remain firm and further business has been done in quantity for the Far East, while stocks are becoming very much reduced pending the arrival of new crop. To arrive, 15s, per lb. c.i.f. is quoted for druggists' 12 per cent., which is also about the London spot price, with only small lots available.

price. with only small lots available.

Constantinofle, June 12.—"During the period May 30 to date arrivals were as follows: Druggists', 2,545 cases; 'softs,' 135; Malatia, 10. The stock amounted to: Druggists', 204 cases; 'softs,' 63; Malatia, 6. Since writing the last report the market has remained firm, and for this reason only 22 cases of druggists' opium were sold at 1,400 to 1,452 piastres, and 4 cases of Malatia at 1,500 miastres. per oke. Following the recent fall in the exchange, the price has again advanced by about 5 per cent. The fall in the exchange, based on the favourable outlook for peace, as well as the absence of rain, are the factors responsible for advancing the price of opium. The drought has caused considerable damage to the opium plantations in the province of Salonica, and has also adversely affected the sowings in the neighbourhood of Constantinople and Smyrna. For these reasons 30 to 40 cases of opium, with a content of 14.5 per cent. of morphine from old stock, were sold in Salonica at 65s, to 70s, per oke, or 23s, to 25s, per lb. Although this opium has a special value on account of its origin, we are of opinion that the price paid was unduly high. Advices from Smyrna show that the stock held there amounts to only 35 cases, of which 25 have been sequestrated and cannot be sold. The few parcels which are now being collected in the interior fetch 1,000 piastres per oke; on account of its high content of moisture the morphine content of this opium is estimated which are now being collected in the interior fetch 1,000 piastres per oke; on account of its high content of moisture the morphine content of this opium is estimated at 8 per cent. After three days of cold and dull weather, iast night there was a heavy fall of rain. If it has also rained in the interior, it is likely that the effects of the drought may be to a large extent counteracted, particularly in the case of the plantations in the districts of Karahissar and Krytchis. and Kutahia, where collection takes place later than elsewhere. The increase in the local stocks is a result of the advance in price which took place last month, dealers bringing their stocks from the interior to Constantinople in order to have them at hand."

Pepper is unchanged, with sellers of fair black Singapore at 4½d. per lb. on the spot. To arrive, June-August and August-October shipment is quoted at 4d. c.i.f. London. White Muntok has sellers at 6½d. spot, and buyers of June-August shipment at 6½d. c.i.f.

Burren is easier owing to lack of demand, and on the

August shipment at 64d. c.i.f.
RUBBER is easier owing to lack of demand, and on the
week has declined fully \$d, per lb. The weakness is due to
heavy liquidation in America, and an absence of buying
orders from home and foreign manufacturers. Steady shipments to New York continue to be made from the East
as well as from the U.K., but these shipments are against
framed contracts made some time ago. Dealers generally ferward contracts made some time ago. Dealers generally show a disinclination to operate, as the position of holders of July rubber is at present uncertain; should any fair quantity be liquidated, a further decline in price may be quantity be liquidated, a further decline in price may be expected during the next fortnight. Landings were rather heavy last week, viz., 1,158 tons, whilst deliveries were also substantial, totalling 1,577 tons; thus stocks were further decreased by 419 tons. Quotations (Tuesday, 5 p.m.): No. 1 standard crêpe and ribbed smoked sheet, spot and June, 1s. 1\frac{1}{2}d.; July-September, 1s. 2d.; October-December, 1s. 2\frac{1}{2}d.; January-March, 1s. 3d. per lb. Balata, after being steadier last week, is again quiet. Iquitos has been in better demand at much lower prices. in better demand at much lower prices.

SHELLAC is steady on the spot with sellers of usual standard TN Orange quality at from 280s. to 285s. Good to fine second Orange is 290s., superfine 300s. to 340s., A.C. cakey 295s., and G.A.L. 250s. The sales for delivery include August at 257s. 6d. to 252s. 6d., and October at 252s. 6d. to 247s. 6d., closing sellers at 242s. 6d.

STARCH PRODUCTS .-- Dutch farina is 9d. per cwt. dearer at 14s. 9d. per cwt. on the spot and for June-July shipment 14s. f.o.b. is quoted. Rice starch crystals offer at 40s. for English and 34s. for Continental. Superior Dutch dextrin is slightly firmer at 23s., and No. 2 at 20s. Maize starch powder is cheaper at 15s. 7½d, per cwt. on the spot.

TURMERIC.—Fair Madras finger is cheaper on the spot at 70s. per cwt. The "Morea" has brought 396 bags from Rembers.

#### Essential Oils

THERE are few changes to report this week, and the demand is quiet. There are buyers for cheap spot lots of star anise oil; cassia is very firm. Java citronella oil is dearer, both on the spot and c.i.f. to arrive. Importers of genuine essential almond oil complain of sales at very low prices; this oil, it may be noted, is easily adulterated, and sales probably apply to such. Bourbon geranium is dearer for probably apply to such. Bourbon gerantum is dearer for shipment, but spot is easy, owing to less demand. Vetivert oil is also dearer to arrive than it is on the spot. The forward price of Algerian is slightly easier.

ALMOND.—Genuine essential oil s.a.p. is a shade easier on the spot in original packages at 12s. 6d. per lb. Business has been reported at figures so much below this as to suggest considerable scapitification.

ANISE (STAR).—"Red Ship" on the spot is unchanged at about 1s, 10d, per lb. The c.i.f. price to arrive is 1s, 9d, Bors DE ROSE (FEMELLE) is unchanged on the spot at 10s, 3d, per lb, in original drums.

CAMPHOR.—For white essential on the spot, 77s. 6d. to 80s. per cwt. is asked. There is very little business at these figures, which are considerably above buyers' ideas.

Cassia on the spot has been sold at 12s, per lb. for 80 to 85 c.a. Business is reported done at 10s. 6d. c.i.f. Cinnamon.—Ceylon leaf on the spot is steady at 4dd. per

CINNAMON.—Ceylon leaf on the spot is steady at 4½d, per oz., and 3½d, c.i.f. to arrive.

CITRONELLA.—Ceylon on the spot is firm at 3s, 8d, to 3s, 9d, per lb., and for shipment 3s, 1d, c.i.f. is now asked. Java is firmer on the spot at 4s, to 4s, 1d, per lb. Further sales are reported up to 3s, 11d, c.i.f.

EUCALYPTUS is steady and unchanged on the spot. For August-October delivery 1s, 8d, per lb., landed terms, is quoted for 70-75 per cent. cineol.

GERANIUM.—Bourbon has been rather quiet, and spot.

quoted for 70-75 per cent, cineol, GERANIUM.—Bourbon has been rather quiet, and spotholders are quoting at the easier rate of 28s. to 28s. 6d. per lb. But recent cables indicato higher prices at the source, 212 fr. c.i.f. Marseilles being quoted (=28s. 6d.) for shipment. Algerian is slightly easier, and is quoted at about 27s. c.i.f. London.

LEMON is unchanged at about 2s. 10d. to 3s. per lb. on

the spot.

LEMONGRASS.—Cochin on the spot is quiet at 22d. per oz.,

and for shipment 2 & d. c.i.f. is quoted.

MINT.—Japanese dementholised Kobayashi-Suzuki is steady
on the spot, with 7s. per lb. reported paid. The price
quoted to arrive is unchanged at 6s, 9d, c.i.f.

Vetivert.—Higher prices have been cabled from the source for Bourbon, 170 fr. (=21s. 3d.) e.i.f. Marseilles being now asked. On the spot there are sellers at from 21s. to 22s.

Pharmaceutical Chemicals, etc.

NOTHING in the way of improvement in the volume of business can be recorded this week. In many quarters a state bordering on stagnation is reported. Many firms are of opinion that so far June has been the worst month for business this year. Quoted rates show little change, but the general tone cannot be recorded as steady.

ACETANILIDE is fairly steady, but only seldom called for as quoted from 1s. 6d. to 1s. 8d. per lb., as to quantity. AMIDOPYRIN seems of little interest as offered by dealers

at about 14s. per lb.

ASPIRIN.—There has been the usual business for this product, with spot holders asking about 3s, 2d, to 3s 3d, per lb. for good brands, with quantity offering at slightly less.

BARBHIONE.—Dealers have to ask up to 21s. per lb. for fresh importations. The demand is very light.

Benzoic acid continues to be mentioned at 2s. 6d. per lb., with no movement.

Betanaphthol (resublimed) continues to be offered at about at 3s. per lb.; benzaldehyde .03 is steady on a quiet market at 3s. per lb.; benzanaphthol shows no life, and is quoted nominally at 5s. per lb.

Browners.—There is nothing to add to our comments of between the comments of the comments of the comments.

last week. Spot offers continue very free, with the demand limited. Ammonium, 7\frac{3}{2}d. to 8\frac{1}{2}d. per lb.; potassium, crystals and granular, 7\frac{1}{2}d. to 8\frac{3}{2}d. per lb.; sodium, crystals and granular, 7\frac{1}{2}d. to 8\frac{3}{2}d. per lb.

CALCIUM LACTATE varies on offer on spot, with large lots as low as 1s. 8d. Smaller quantities from 1s. 10d. to 1s. 11d.

per lb.

CHLORAL HYDRATE.—Duty paid on spot is worth about 4s. to 4s. 3d. per lb., but the demand is slow.

CHLOROFORM.—Pure B.P. in cwt. lots is quoted at 2s 2d.

per lb.

CITRIC ACID.—During the last week there seem to have been a lull in spot business. Despite this, most offers going round are in the region of 1s. 8d. to 1s. 9d. per lb.

CODEINE.—Makers have advanced their prices by 7d. to 9d. per oz. and now quote as follows:—

	List Price,	16 oz. and up- wards.	25 oz. and up- wards.	100 oz. and up- wards.
Codeine alkaloid cryst . oz.  alkaloid precip.  hydrochloride . ,  phosphate . ,  sulphate . ,	14/9	14/6	14/3	13/9
	14/9	14/6	14/3	13/9
	12/8	12/5	11/11	11/8
	11/1	10/10	10/7	10/4
	12/8	12/5	11/11	11/8

CREOSOTE B.P. is steady but dull as quoted at about 2s, 2d.

CREOSOTE CARBONATE is maintained on spot at about 8s. 6d. per lb., with very little business about.

GALLIC ACID is steady at about 3s. per lb.

GUALACOL CARBONATE is quoted from 8s. 3d. to 8s. 6d. per lb. on spot, but seems of little interest.

HEXAMINE is inclined to be weaker at from 3s. 10d, to 4s.

per lb., according to quantity.

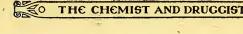
Hydroquinone is in occasional demand, with the quoted price about 3s. 8d. to 3s. 9d. per lb.

METHYL SALICYLATE is one of the bright features, with the

market quite steady at about 2s. 6d. per lb.

MORPHINE.—Owing to the advance in the price of opium being maintained, makers have been compelled to issue a new schedule of prices for the alkaloid and its salts, showing an advance of from 6d, to 8d, per oz. They now quote as follows:—

	List Price.	For 16 oz. and up- wards.	For 25 oz. and up- wards.	For 100 oz. and up- wards.
Morphine alkaloid cryst. oz.  " alkaloid precip. " acetate " " bromide " " hydrochloride cryst. " meconate " " sulphate cryst. " tartrate (neutral) "	11/11 11/8 9/3 11/8 9/3 9/6 11/8 9/3 9/6 11/8	11/7 11/4 9/- 11/4 9/- 9/3 11/4 9/- 9/3 11/4	11/3 11/- 8/9 11/- 8/9 9/- 11/- 8/9 9/- 11/-	10/11 10/8 8/6 10/8 8/6 8/9 10/8 8/6 8/9 10/8 For 50 oz. and
Morphine diacetyl ,, diacetyl hydrochl. ,, ,, ethyl hydrochloride,,	14/9 13/9 14/9	16/6 13/6 14/6	14/3 13/3 14/3	upwards. 13/9 12/9 13/9



PARAFORMALDEHYDE is very steady, and the demand has been sustained with spot sellers asking about 3s. 9d. per lb.

PARALDEHYDE remains dull with spot offers at from

PARALDEHYDE remains dull with spot oliers at from 1s. 5d. to 1s. 7d. per lb. as to quantity.

PHEMACETIN.—The quotation on spot remain level at 6s. 6d. per lb., but business seems rather difficult at that rate.

PHENAZONE has been rather quieter, with dealers still asking up to about 7s. 6d. per lb.

PHENOLPHTHALEIN is steady, although not at all active.

Spot offers are from 6s. 3d. to 6s. 6d. per lb.

POTASSIUM IODIDE is in fair demand, makers quoting 15s. 8d per lb.

15s. 8d. per lb.

POTASSIUM PERMANGANATE B.P. is a good market, with sales of small lots at about 11d. per lb., and slightly less for large quantities.

Pyrogallic acid is offered at from 5s. 6d. to 5s. 9d. per lb.

PYROGALLIC ACID is offered at from 5s. 6d. to 5s. 9d. per 1b. for crystals, according to quantity.

RESORCIN is fully maintained at last week's higher levels of 5s. 9d. to 6s. per lb.

SALIGYLIC ACID.—The market keeps fairly steady, but business has not been so good of late. The average quotation is near 2s. 2d. per lb., and 2s. 1d. for quantity.

SALOL is quoted unchanged at 2s. 9d. to 3s. per lb. A little enquiry has been dealt with.

SODIUM BENZOATE continues to be quoted at about 2s. 6d. per lb. but business is still lacking.

per lb., but business is still lacking.

SODIUM DIETHYLBARBITURATE remains dull, with dealers

quoting at about 18s, to 18s, 6d, per lb.

SODIUM SALICYLATE.—Dealers' prices show no change on the week. The spot position seems fairly steady, although there is not much doing. B.P. powder, 2s. 5d, to 2s. 7d; erystals, 2s. 8d, to 2s. 10d.; phys. pure flake, 2s. 10d, to 3s, per lb., according to quantity.

according to quantity.

SULPHONAL can be had at 14s. per lb., being a trifle casier.

TARTARIC ACID. B.P. is steady and in fair demand, with
the price at about 1s. 3d. to 1s. 3½d. per lb., less 2½ per cent.

TERPIN HYDRATE is steady, with a few sales effected in the
region of 1s. 9d. per lb.

THYNOL is offering at about 15s. 6d. per lb., with the

market flat.

#### Industrial Chemicals, etc.

London, Wednesday, June 27. London, Wednesday, June 27.

Business seems to be very depressed, and complaint as to the inert state of the chemical markets is received from all quarters. Although this unsatisfactory state of affairs is so marked, prices seem to be fairly well maintained. These remarks apply to the home trade especially. Export business is also of a very restricted nature.

Acetic acid continues firm on spot and limited in supply. Spot holders ask: 80 per cent. technical, about £47; 80 per cent. pure, £50; 98 per cent. glacial, £60, in casks and £75 in glass demijohns, ex wharf, London.

Acetone is still being called for, and with spot supplies now practically eleared the price is firm at the slightly higher price of £120 per ton for British Government specification.

cation.

ALUM remains dull, with dealers still offering lump in casks at about £10 to £10 10s. per ton.

Casks at about £10 to £10 10s, per ton.

Ammonium (anhydronous) is steady, with importers quoting from 18, 5½d, to 1s, 6d, per lb, for 99.95 per cent.

Arsenic.—Spot parcels of small quantities are floating around and offered at £71 to £72 per ton for Cornish white powdered.

BLEACHING POWDER (35/37 per cent) finds little sale, with importers offering for shipment at about £10 per ton, c.i.f. COPPER SULPHATE is steady, with the price in the region of £26 10s, per ton for small quantities of a few tons.

£26 10s. per ton for small quantities of a few tons.

CREAM OF TARTAR, from dealers, is offering at about 92s.
to 94s. per cwt., less 2½ per cent., and fair sales continue.

EPSOM SALTS remains flat, with commercial quality offering at about £5 to £5 5s. per ton, in bags.

FORMALDEHYDE is now quoted on spot at the slightly higher price of £94 per ton for 40 per cent. volume material, with supplies restricted. The hearing of the appeal against the inclusion in the Key List of this product continues.

LEAD ACETATE is firm on spot owing to scarcity and high prices on the Continent. Brown, £42; white crystals, £45 per ton.

POTASH CAUSTIC.—On spot dealers are finding business none too good and are offering 88/92 per cent, solid in drums at about £32 to £32 10s, per ton. Continental prices are reported as being firmer.

ported as being firmer.

POTASSIUM CARBONATE has been dragging in sale. Spot stocks are available, with the prices maintained so far. 90/92 per cent., about £29: 96/98 per cent., £32 per ton. Continental offerings are dearer.

POTASSIUM CHLORATE is unchanged, with little doing-quoted in the region of 3d. per lb.

POTASSIUM PERMANGANATE has been moving fairly well, with the selling price in the neighbourhood of 10d. per lb. for commercial quality.

POTASSIUM PRUSSIATE.—Yellow has once more moved to

POTASSIUM PRUSSIATE.—Yellow has once more moved to cheaper rates, and is now offered on a dull market at about 1s. 3½d. per lb. Red is steady at 2s. 10d. per lb.

SALTCAKE is very steady, with plenty of inquiry for what material is available. Home trade, £5 per ton; export, about £5 10s. per ton, f.o.b.

SODA CAUSTIC.—Dealers' quotations are unchanged, but they find business light. 70/72 per cent., £19 10s.; 76/77 per cent., £21 10s. per ton, ex wharf, shipping port. British makers quote for home trade only at unchanged rates of £19 to £21 10s. per ton, in drums, earriage paid.

SODIUM ACETATE continues to be quoted for forward delivery by dealers at about £25 per ton.

SODIUM BICARBONATE from British makers for home trade only is quoted at about £10 10s. per ton, in bags, carriage

only is quoted at about £10 10s. per ton, in bags, carriage paid in the United Kingdom.

Sodium Chlorate remains dull, with the quoted price about 27d. per lb.

Sodium hyposulphite.—Pea crystals, in 1-ewt. kegs, is in fair demand, with the price at about £15 10s. per ton; commercial quality from £10 to £10 10s. per ton, in casks.

SODIUM PRUSSIATE remains very dull; freely offered at

about 7d. per lb.

COAL TAR PRODUCTS, ETC.—The general slackness in business so noticeable in the chemical markets also applies to these products. Prices, however, are being maintained. Pitch continues to recover some of its recent big drop in price and seems to be firmer. Aniline Oil and Salt are a little cheaper this week, being quoted at 9½d, to 10d, per gallon, packages free. Betanaphthol is quoted at the lower rates of 1s, 1d, to 1s, 2d, per 1b., with the market still dull. Pitch, in London, has again this week moved up to better figures, and to-day's quotation of about 130s, per ton seems quite firm. Pure Methyl alcohol is fully maintained at the level of £100 per ton, with not much about. Carbolic activety of \$100 per ton, with not much about. Carbolic activety of \$100 per ton, with not much about. Carbolic activety of \$100 per ton, with not much about. Carbolic activety of \$100 per ton, with not much about. Carbolic activety of \$100 per ton, with not much about. Carbolic activety of \$100 per ton, with not much about. Carbolic activety of \$100 per ton, with not much about. Carbolic activety of \$100 per ton, with not much about. Carbolic activety of \$100 per ton, with not much about. Carbolic activety of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton, with not much about. Sate and the level of \$100 per ton and the level of \$100 pe COAL TAR PRODUCTS, ETC.—The general slackness in busirecorded. CRESTIC ACID keeps very steady at about 2s. 3d. per gallon, drums extra. PYRIDINE is now very scarce, with very little available; the spot price of 18s, per gallon is very firm. HEXAMETHYLENE is not offering below 4s. to 4s. 3d. per gallon. DISINFECTANTS remain quiet, with the quoted rate at 3s. 9d. per gallon, barrels free. NAPHTHALENE is a good market, with the spot price up to £20 per ton; crude, £7 to £13; crystals, £21; powdered, £17 10s.; balls, £24; tablets, £28; eandles, £28 per ton, packages free.

#### Fixed Oils, etc.

Some markets have done moderate business, and the prices returned in these instances show little change and are fairly steady. In other items things have been very dull, and easier rates are now quoted. ACID OILS.—Prices have fluctuated, but the market closes quite steady; coeonut, palm-kernel, 38s. 6d.; groundnut. 36s.; soya, 35s., all spot. COCONUT OIL has been quiet all the week; prices are fairly well maintained; deodorised, 51s. spot; Ceylon, 43s. 6d., and Coehin, 47s. 6d., c.i.f. COTTONSEED OIL.—Prices, except deodorised, which is steady at 47s. 9d., are returned at somewhat easier rates with the market steady at the close; common edible, 45s.; soapmaking, 42s. 6d.; crude, 40s., all spot. GROUNDNUT OIL.—Prices have declined, and business has been dull deodorised, 51s. spot; crude Oriental, 45s., c.i.f. PALM-KERNEL OIL is firmer, and prices have advanced a little; deodorised, 46s. 6d.; crude, 42s., all spot. PALM OIL.—Quoted rates at the close were much about the same levels as reported last week, and the tone is now Some markets have done moderate business, and the prices spot. Palm oil.—Quoted rates at the close were much about the same levels as reported last week, and the tone is now quite firm with a fair volume of business; Lagos, 56s.; softs, 35s. 9d.; medium, 36s.; hards, 36s. 3d.; bleached, 38s. 3d., all spot. Rape oil.—Prices quoted are a shade easier with the market quiet; refined, 47s. 6d.; crude, 43s. 9d., all spot. Soya bean oil.—A sharp decline in prices is recorded, with the market very flat; deodorised, 44s. 6d.; crude, 40s. 3d., all spot. Linseed oil. (raw, naked).—On the week the spot rate has shown a little improvement, but the later positions are still returned at the wide discount reported last week. On spot. 44s. 6d.; June, 42s. 3d.; July-August. 41s.; September-December, 38s. 9d. Hull. on spot. 41s.; July-August, 40s.; September-December, 38s. 6d. Turrentine (American).—Business has continued very quiet, and still lower rates are quoted for all positions. On spot. 86s.; July-December, 71s. 9d. Total stocks in London are returned as at 5,400 barrels of American spirit and about 70 barrels of French. Wood oil.—The spot offers are very irregular, with an average of about 104s., in barrels. There is very little business doing. is very little business doing.



Letters for this section should be written on one side of the paper only. Correspondents may adopt an assumed name for purposes of publication, but must in all cases furnish their real name and address to the Editor.

#### Are Receipts Necessary?

Sir,—In America business firms have abolished the custom of sending receipts, and attach a perforated tear-off, with wording like the following: "When you remit by cheque, detach this portion and retain the statement. No receipt will be sent, as your cheque with our endorsement is a valid receipt." What are the opinions of your readers as to the discontinuance of sending receipts? It is a serious tax on firms with innumerable small accounts.—Yours faithfully,

#### Business Man (26/6).

#### Journeys by Aeroplane

SIR,—On June 20 I made the trip to the Chemists' Exhibition by aeroplane. Leaving Manchester at 9 a.m. by the ten-seater Daimler aeroplane, I reached Croydon at 10.30 a.m., the air journey taking exactly an hour and a half. From Croydon passengers are conveyed to the City by Daimler cars, and I found myself in the exhibition shortly after 11 a.m. You will, no doubt, remember that I went to London by the same means in November last, and established the claim of being the first northern pharmacist to "fly" to London on business. On that coession a strong gala was blowing and ness. On that occasion a strong gale was blowing, and the same journey occupied three hours. One is often asked what the "sensation" is like. There is no sensation. There is, however, a tendency to sickness (similar to sea-sickness) if the weather is rough. Contrary to the general belief, there is never a suspicion of dizziness. A Daimler machine comprises an enclosed saloon, roomy and comfortable; the seats are arm-chairs, and a good view of the country can be obtained when the clouds are not too low. One can read and write with ease and comfort. Even when travelling at a speed of 130 miles an hour the impression is that of moving very slowly. Trains below on the main line appear to be moving slowly, too, but one quickly overtakes them. Conversa-tion in the aeroplane is slightly difficult owing to the noise of the motors; but I should say that the noise in the saloon is not so pronounced to passengers as to observers on the ground, unless, of course, one is travelling at a great height. An indicator in the front of the saloon gives one the altitude at which one is flying. must say I found this method of reaching London very useful. One can transact quite a volume of business in the City and yet have ample time also for a little sightseeing and catch the best train of the evening for home.— Faithfully yours,

#### HARRY T. MORLEY.

Stockport.

#### Intentions or Instructions?

Sir,—I see that "Xrayser II." reflects on the absurdity of a magistrate insisting that when a doctor prescribes a half-ounce dose, "a tablespoonful" will not do (C. & D., June 16, p. 841). If the magistrate lays down as a legal obligation that the dispenser is bound to abide by the instructions of the doctor and not his intentions he is, to use a vulgar phrase, "talking through his hat," and I wonder what he would think if a dispenser adhered to the instructions of the oft-quoted script: "P. Hyd. perchlor. gr. v, h. s.s.; pulv. seidlitz, cras mane." No matter how meticulous the dispenser may be, one cannot compel every customer to purchase a medicine glass, nor can one prevent the consumer from drinking out of the bottle; and unless some such steps could be taken, all this petty prosecution to obtain "mathematical" accuracy is about as futile as a man putting up a garden sbed and measuring it with a micrometer to thousandths of an inch.

Faithfully yours,
MICRODOSE (16/6).

#### Branded v. "Own-name" Goods

SIR,-Some of the remarks of Mr. H. E. Brown in his address to the Hull Chemists' Association (C. & D., June 16, p. 847) deserve the fuller consideration of all pharmacists. I refer to that part of his address in which be called attention to the growing practice of issuing branded goods instead of packed lines with the chemist's own name and address. It has always been my contention that every pharmacist in business should pack his own lines, such as glycerin, castor oil and eucalyptus oil, and the only case in which he cannot do so advantageously is when he is single-handed or very short of assistance. If, however, time or want of help compels one to buy these goods ready packed, it should be a sine qua non the pharmacist to insist on having his own name and address on the label, and no proprietary trade-mark; the adoption of a style containing such a mark is to kill his own personality at once. The wholesaler is quite able to look after his own interests without the retailer doing his spade work for him; and it has been proved over and over again that once the chemist has established a market for branded goods, either the wholesale prices go up or else the manufacturer endeavours to increase the sale by distributing through other trades.

Yours faithfully, Own Packer (18/6).

#### Miscellaneous Inquiries

When samples are sent particulars should be supplied to us as to their origin, what they are, what they are used for and how. We do not undertake to analyse and report upon proprietary articles nor to publish supposed formulas for them.

G. F. B. (11/5).—FUMIGANT FOR DESTROYING WASFS AND FLIES in peach-houses and vineries.—This liquid appears to consists entirely of tetrachlorethane, coloured green. Its specific gravity is 1.62, and its boiling point 144°.

Perplexed (16/4).—CATTLE SUPPOSITORY FOR PREVENTING ABORTION.—This has a gelatine basis, and contains a considerable quantity of iodoform as its medicament. The idea apparently is to employ a safe antiseptic to the vaginal passage.

Racer (5/5).—POWDER FOR RACE HORSES, which is administered as a stimulant before a race.—This appears to consist entirely of caffeine citrate. It should be an efficient stimulant for the purpose and not so injurious as the cocaine dope formerly employed.

#### Retrospect of Fifty Years Ago

Reprinted from "The Chemist and Druggist," June 14, 1873.

#### Trade Report

It speaks well for the sound state of British commerce when we find it going steadily on, comparatively unaffected by the startling events which political and financial disturbers are now perpetually stirring up. The revolution in France, effected, happily, without bloodshed, is not altogether satisfactory to those who wish to see a settled condition of affairs in our neighbouring land. It is impossible to suppose that, with the country growing more and more republican every day, a violent wrench of the Executive towards Monarchy can lead to permanence or solidity. A more disturbing element than Marshal MacMahon's election to the supreme power at Versailles has been the severe financial crisis in Vienna, which also affected Berlin, and more or less the whole of Germany. This has, no doubt, had a serious effect on English export trade. Germany is a customer of continually growing importance, and the relations between the two countries are annually becoming more intimate. Besides these events, we have had at home the Whitsuntide holidays, including the Bank Holiday on Whit Monday—which latter was most rigorously observed in the City—and the Derby. The wonder is that trade has been able to make any way at all

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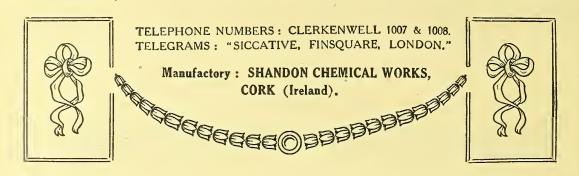
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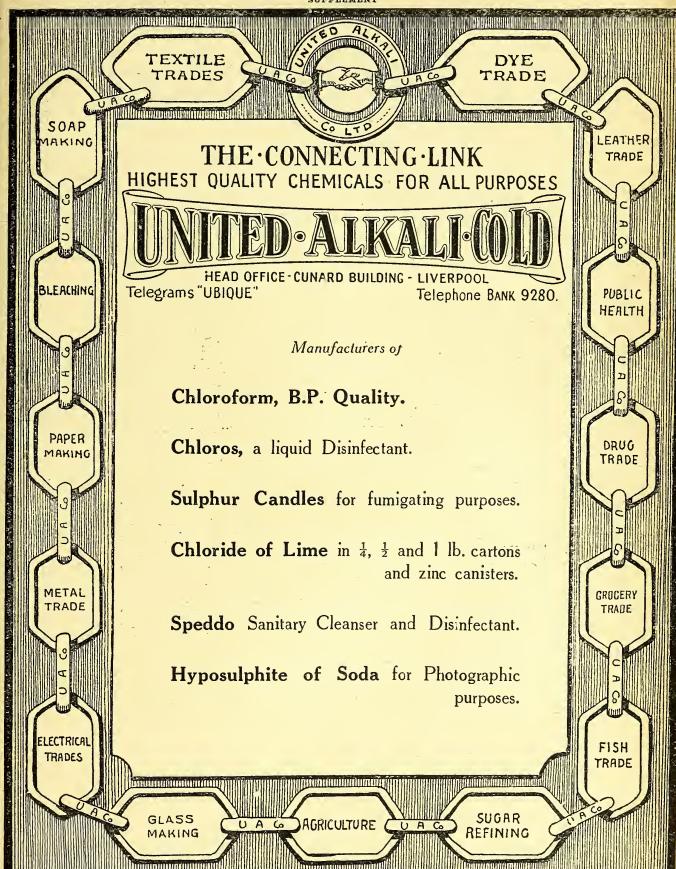
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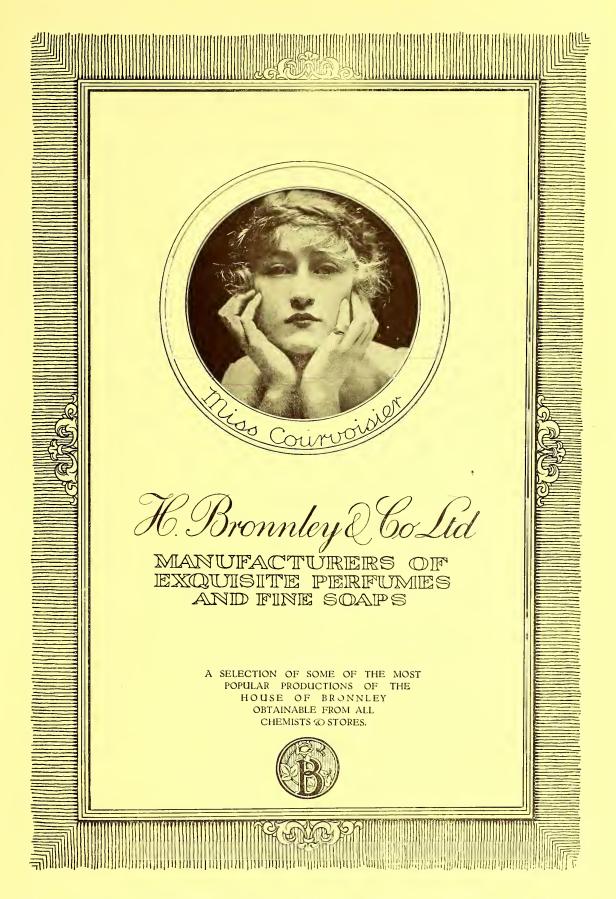
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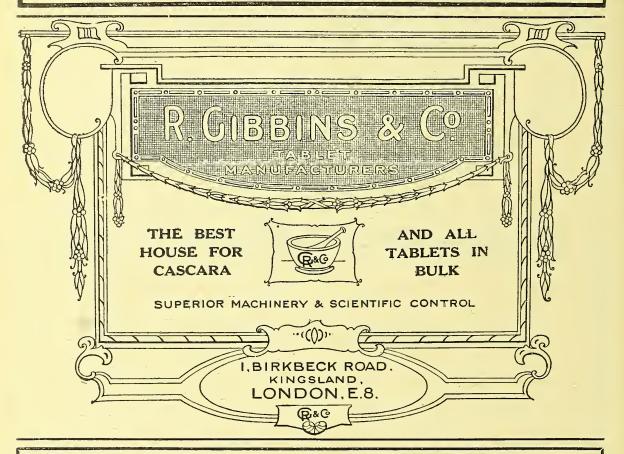
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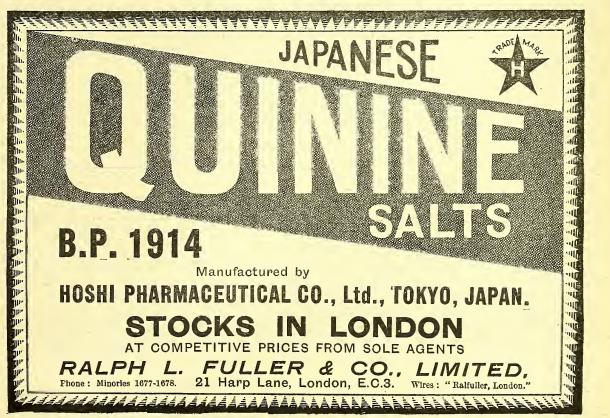
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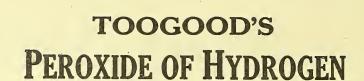
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CHEMICAL COMPOSITION.—Sedasprin is a definite compound, containing 30.86% Bromide and 69.14% Aspirin. In common with Aspriodine, this Bromide analogue is stable at ordinary temperatures. Sedasprin should be given preferably as such in tablet (crushed) or in cachet form with water.

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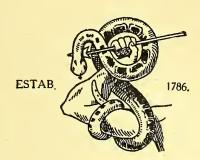
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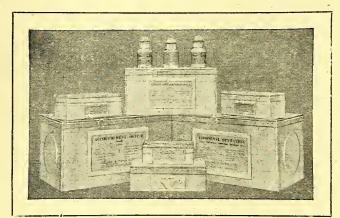
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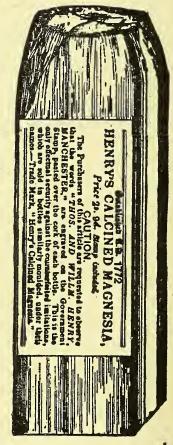
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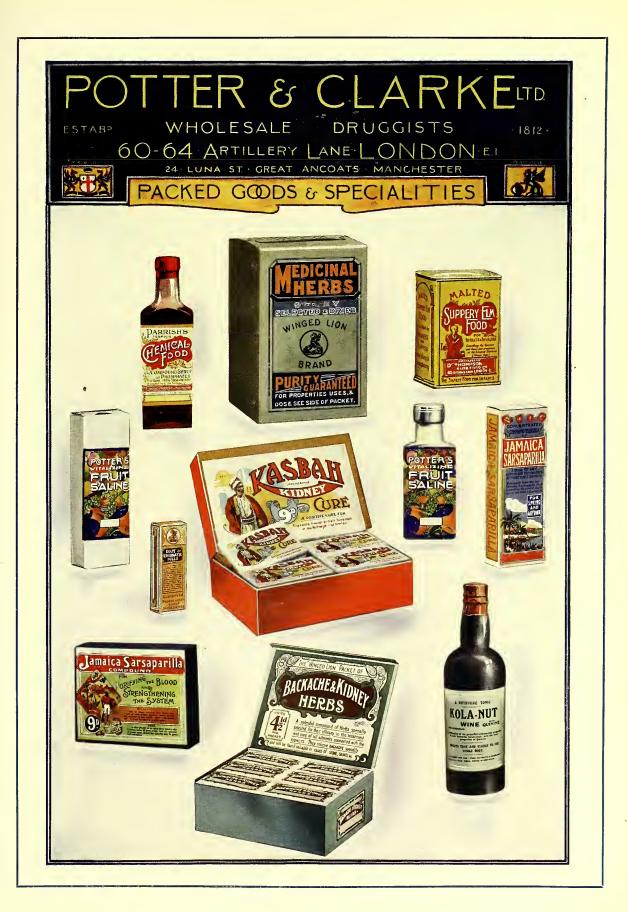
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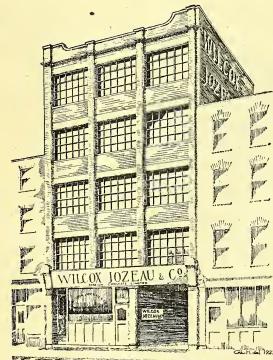
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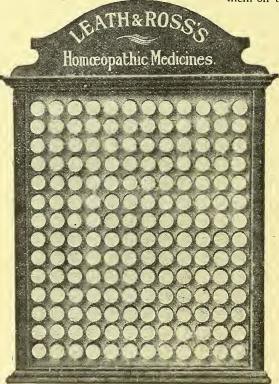
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Apply to THE FIKENY STORES CO.

131a REGENT STREET, LONDON, W.

The Names of Stockists will be inserted in local advertisements.

<del>รีสีแดงสองเกตเดอเมลเดเลยเดออกเดอเสอเดอเดอเกตเลเกอเด้</del>มอมสายเดิดเดิดเลี้



Krumbled Bran is a health necessity and should be eaten daily. It naturally and permanently relieves constipation.

Prices and samples from:

S. D. SIMOND & CO., LTD., 10 MONUMENT ST., LONDON, E.C.3, ENGLAND.

### London Depot:

### 1 SWAN STREET MINORIES

Telephone

Avenue 6255.



JUR London Warehouse at the above address IS NOW OPEN for the prompt despatch of urgent orders. A full range of all lines and specialities in

### **LOZENGES PASTILLES COMPRESSED TABLETS** SALINES & CITRATES

will be held in stock.

### SPRING and SUMMER LINES

We can now supply our full range of new and attractive showcards, cartons, etc., for the present season.

THOS. GUEST & CO., Ltd.

ANCOATS - - - MANCHESTER.

### PACKED GOODS OF DISTINCTION

We specialise in

### PACKED DRUGS, PHARMACEUTICALS AND COMPRESSED TABLETS

of the Highest Quality at Keenly Competitive Prices.

### SPECIAL OFFER of ASPIRIN TABLETS

Our Aspirin Tablets disintegrate rapidly and the Acid Acet. Salicyl used is guaranteed to comply with the requirements of the British Pharmacopæia.

Attractively Packed in Nickel Screw Capped Bottles of 25 Tablets 33/- per gross. Carriage Paid.

### CHRYSTOID (CHEMISTS), LTD.

1-3 Gower Street, BOOTLE, LIVERPOOL.

Telephone: Bootle 126.

Telegrams: "Bluechris, Liverpool."

### BISHOP'S HYDROLETTES for OVERFATNESS

An extensive Advertising Campaign is being arranged in the Public Press, and Chemists are advised to hold a small stock of Bishop's HYDROLETTES in order to meet the demand.

Attractive Show Cards will be sent for Window Display.

An order for 3 dozen Hydrolettes at 66/- per dozen Less 10% discount	£9 18 0 0 19 9
	8 18 3
Selling at 7/6 per carton P.A.T.A	13 10 0
Total cost—carriage paid	8 18 3
Profit	£4 11 9

### ALFRED BISHOP, LTD.

48 SPELMAN STREET

LONDON, E.1

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### "CEPHOS"

The Physician's Remedy for Headache, Neuralgia, Neuritis, Rheumatism, and Influenza.

LIBERAL TRADE TERMS. Sole Proprietors:
CEPHOS, LIMITED
BLACKBURN.

RETAILS at 1/3 and 3/-Single Powders . . 2½d.



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### Alspa Salts

A new non-effervescing morning aperient. On the P.A.T.A. and is nationally advertised.

Write for Special Bonus Terms for Window Display. Dummies, Showcards, Window Bills free on application. Retails at 1/9 per Bottle.

TRADE TERMS.

1 doz. .. 15/- per doz. net
3 ... .. , less 2½%
6 ... .. , 5%
12 ... .. , 10%

ALSPA,

LIMITED

'Phone : Clerkenwell 7120 648 Salisbury House, London Wall, London, E.C.2.

### IMPORTANT NOTICE.

### CROOKES' COLLOSOLS—EXPORT

THE CROOKES LABORATORIES are now in a position solely to supply all requirements for Crookes' Collosols in Foreign and Colonial Markets.

All supplies of these valuable preparations will in future only be manufactured at the address given below, and none are genuine unless bearing the name of The Crookes Laboratories.

Particulars as to Agency terms will gladly be sent on request.

Telephone: MUSEUM 3663—3697.

Telegrams:
"COLOSSALLY, WESTCENT,
LONDON."

THE CROOKES LABORATORIES

22 CHENIES STREET, TOTTENHAM COURT RD., LONDON, W.C.1.

Coryton's

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Good Summer Lines

A liquid application for tender and hot feet. No bathing necessary. It is applied to the feet with a sponge night and morning. 7/9 per doz.

4-oz. bottles 10

14/6

Name and Address printed free on 3 dozen lots.

A wonderful preventative against and a certain remedy for the Stings of Wasps, Bees, Mosquitoes, Gnats, Midges, &c.

AS A PREVENTATIVE.—Paint the exposed part of the body. AS A REMEDY.—Apply one drop to the part affected, and renew at intervals until relief is obtained. Packed in bottles, each in a distinctive carton.

Price 5/9 per dozen.

SPECIAL POCKET SIZE, 4 6 per dozen. Samples on Application.

### C. R. HARKER, STAGG & MO

DEVON WHARF AND BELL WHARF.

STREET, MILE END. LONDON

(Volatalise)

High radio activity through the skin to the lower layers and organs.

ATISM, BRONCHITIS, S, SCIATICA, LUMBAGO.

Sold in Fancy Boxes at 1/3 and 3/-, also by the yard at 12/-, and made up into every garment sold by the Chemist.

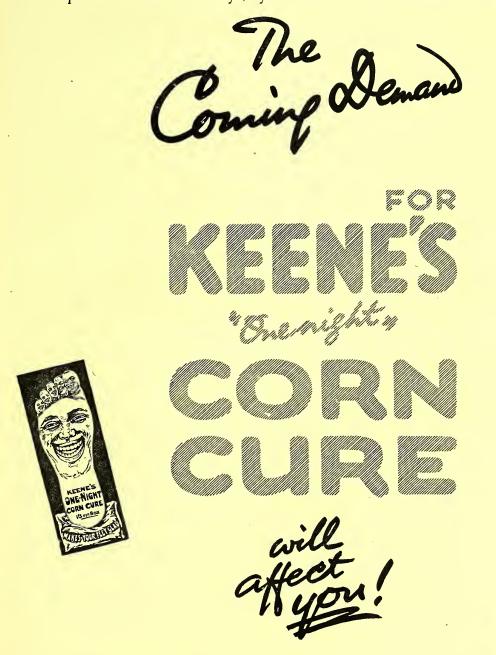
Samples and Wholesale Prices on application.

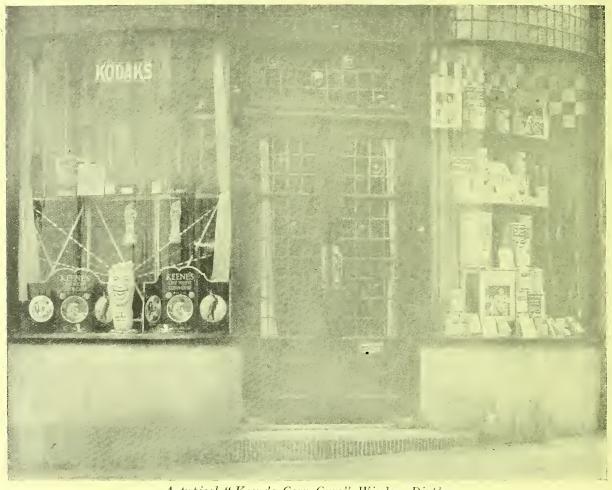
S LIMITED, Huddersfield, ENGLAND

E are confident that our advertising—through its sheer interest and force—is creating in the public mind a desire to purchase our preparation. We can certainly maintain this influence; we can even increase it. But we cannot lead the public into your particular store. That is *your* task, and by no means a difficult one.

You have only to display Keene's Corn Cure in your window and on your counter, and so let the public know that you stock it, in order to secure your full share of the business.

We inspire the desire to buy; you must turn that desire into action.





A typical "Keene's Corn Cure" Window Display.

HE pull of our advertising can be made still more powerful if you will add your weight to the rope. An attractive counter and window display of Keene's Corn Cure, even if only for one week, will give just that local emphasis to our current advertising as will bring a full share of the demand into your own store.

To help you to make a good display we will send you some excellent material. First there is a fine model, 21 inches high, of the well-known "laughing foot." Next, there is a handsome three-fold window-screen, beautifully coloured, and telling a story that strikes an irresistibly human note. There is also a striking coloured cut-out of the "laughing foot" suitable either for counter or window display; and, finally, the very attractive display carton in which Keene's Corn Cure is now packed provides another excellent counter or window exhibit.

We offer you these aids; will you accept and use them?

Selling Helps for Retailers



### KEENE'S Charco - Pepsic DIGESTIVE TABLETS The Satest medical Discovery

SHORTLY we shall commence a strong advertising campaign on behalf of this well-known line. An important feature of this campaign will be a wide-spread FREE SAMPLE distribution.

The Charco-Pepsic Tablets are now being put up in a new and attractive form. This is a line which will show big profits to you, and, by reason of its valuable medical properties, it will certainly achieve popularity and a big sale.



KEENE'S LABORATORIES, 52, Grays Inn Road, London, W.C.1

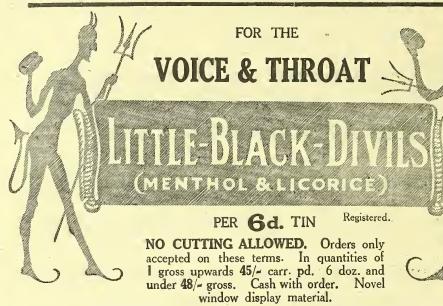
# Dr. Cassell's Tablets and Germolene The Aseptic Skin Dressing If you make a Window Show these goods give 30°/. profit AND REMEMBER THAT TO DISPLAY THEM DOES NOT MERELY MEAN AN EXTRA 5% DISCOUNT IT MUST MEAN EXTRA 5% DISCOUNT IT MUST MEAN EXTRA SALES This spring our advertising has been bigger and better than ever before. Our Sales Records have amazed even ourselves. The boom is still on. Now is the psychological moment to take full advantage of it. Hundreds of chemists are demonstrating every day in the week that it really pays to put Veno goods in the window 5 per cent. EXTRA DISCOUNT if you make a Display 2½ per cent. discount Cash in 30 days. Goods Carriage Pald to destination in free boxes. Large size 30/- per doz., to sell at 1/3. PROFIT ON COST: 30 per cent. The VENO DRUG Co., Ltd., Manufacturing Chemists, Chester Road, MANCHESTER Telephone: 12 TRAFFORD PARK. Telephone: 13 Telephone: 14 TRAFFORD PARK. Telephone: 15 Telephone: 16 TELEPHONE TELEPHONE TELEPHORE TELEPHONE Dr. Cassell's Tablets

This spring our advertising has been bigger and better than boom is still on. Now is the psychological moment to take full advantage of it. Hundreds of chemists are demonstrating every day n the week that it really pays to put Veno goods in the window

per cent. EXTRA DISCOUNT if you make a Display

### The VENO DRUG Co., Ltd.,

### A TOP HOLE SELLER



MAY BE OBTAINED FROM WHOLESALE HOUSES OR DIRECT FROM-

BEWELLS' Ltd.,

MANUFACTURING CHEMISTS, 19-21 Pitfield St., N.1

### BEECHAM'S PILLS

### WHOLESALE PRICES.

### Beecham's Pills:

1s. 3d. size 10s. 6d. per doz. net. 3s. 0d. " 26s. 6d. 50s. 0d. 5s. 0d. new size, contains double the quantity of 3s. box,

### Beecham's Cough

1s. 3d. size 10s. 6d. per doz. net. 3s. 0d. .. 26s. 6d.

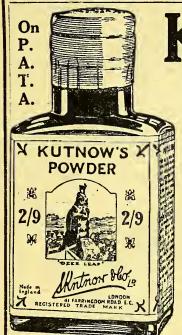
Minimum quantity £5 value.

Packages FREE.

Carriage PAID.

CASH WITH ORDER.

Cheques to be made payable to THOMAS BEECHAM, and crossed "Westminster Bank, Ld., St. Helens."



### Kutnow's Powder

Prescribed by Doctors

All leading Physicians use and prescribe Kutnow's Powder for men, women and children. It is a painless aperient of proved value in all cases of Liver, Kidney, Stomach and Bowel Disorders.

### Widely Advertised

Kutnow's Powder is used all over the world with unequalled success. It always satisfies your customers and enhances your reputation for high-class goods. It yields good profit. See to your stocks.

Write
for
Special
Bonus
Terms
for
Window
Display

### All over the World

S. Kutnow and Co., Ltd. 41 Farringdon Road, London, E.C.1

### SUGAR of MILK

Sacchar. Lact., B.P.

"The Best"

Hollandsche Melksuikerfabriek Amsterdam



### IT PAYS YOU TO STOCK **MOTHERSILL'S** SEASICK REMEDY

The only prevention and cure for sea, train and air sickness that is-

Advertised regularly, year in and year out, on a national scale.

Guaranteed not to contain Cocaine, Morphine, Opium, Chloral or any of the Coal-Tar products. Sold under a positive money-back guarantee to prevent and cure sea, train or air sickness.

Guaranteed to be free from any after-effects.



Secure a good profit, a quick turnover, and satisfy customers by stocking MOTHERSILL'S, the only universally known Seasick Remedy.

MOTHERSILL REMEDY CO., Ltd. 19, ST. BRIDE STREET, LONDON, E.C.4.

### NURSE HARVEY'S

A safe, simple, and reliable remedy for Children's Ailments is advertised so extensively in the daily and weekly Press as to bring mothers to the retailer without effort on his part.

The selling has been done before the mother reaches the chemist, and, having supplied her, it is only common sense to claim she will huy other family necessaries from him. Moreover, the retailer has a profitable return on a quick turnover.

For Direct Terms apply to-

OSCAR SCRUTON & CO., YORK

### GARFIEL

PROMPT SHIPMENT

ALL SIZES

Phone or Write:

GARFIELD TEA CO.

44 Foxbourne Road.

BALHAM, LONDON, S.W.17.

### "COMFYLEAF" For the Prevention, Relief and Cure of

### HLOGETAN

Mark.

?? Trade A derivative of albuminoid bodies containing nucleoproteid originated by Prof. Oskar Fischer, Prague. Specially indicated in PROGRESSIVE PARALYSIS, TABES DORSALIS, CEREBROSPINAL SYPHILIS, &c.

Now being extensively advertised to the Medical Profession.

Issued in Ampoules—Boxes of 5 amps of 5 c.c. (Uniform Packing), 12/6; Boxes of 5 amps of 2 to 5 c.c. (Series Packing), 12/-Manufactured by The Norgine Chemical Works, Prague, Czecho-Slovakia. Sole Representative, J. T Roberts, 23 Panmure St., Dundee

Obtainable through all Wholesale Houses or direct from the Distributing Agents: DICK, COATES & CO., 41 Gt. Tower St., London, E.C.3



A TRADE HINT FROM THE PRESS

A Summer Use for "Sanitas Fluid."

A NEW use, or a use not generally known, for a standard product is always good business. For mosquito and midge bites recommend

"Those who indulge in outdoor sports, especially tennis, cannot fail to have noticed how spiteful the gnats have been during the prevailing damp weather. The neck, arms, and any exposed part of the body, when heated by exercise, are specially open to attack, and we have seen some very painful results from bites. A local chemist tells of a very bad case of a lady who, when hot from play, sat in the shade of some shrubs and was so badly bitten that on Sunday she had to be medically treated. An experienced trainer advises all young women who are specially subject to bites to rub their hands, arms and the back of the neck with undiluted Sanitas as sold by the chemist for toilet purposes. He said, 'I am specially subject to the attentions of these nuisances, and until I took a bottle of Sanitas with me to the dressing room was quite miserable after a few days' play, with the irritation and, in my case, severe inflamed spots. Now, thanks to a liberal use of Sanitas Fluid, I am feeling practically free, and if I do get a bite on the neck there is no particular irritation or redness."

Crystal Palace Advertiser.

For Showcards and Printed Matter to help you to sell "Sanitas" preparations address

The "Sanitas" Co., Ltd., London, E.14

### RUSSIAN PARAFFIN

Purest Medicinal (S.P.G. \*885/90) Viscosity - 280

We are offering exceptionally pure Russian Medicinal Liquid Paraffin, high viscosity, non-clouding, at

oz.		1	er doz
4	- '	~	7/-
6	~		8/9
8	~	-	10/6
12	~	-	15/-
16	~	~	19/-
20	_		23/6

Packed, labelled Russian, script labels. White Flats or Ovals.

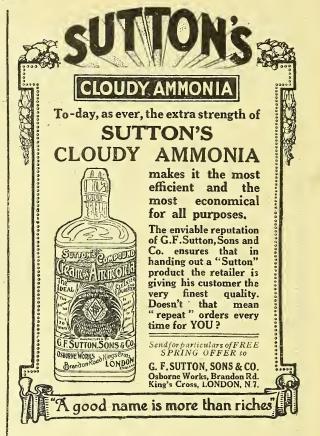
Own name and address on 3 dozen assorted. Carriage paid on orders of £3 net. (Ireland £5 net.)

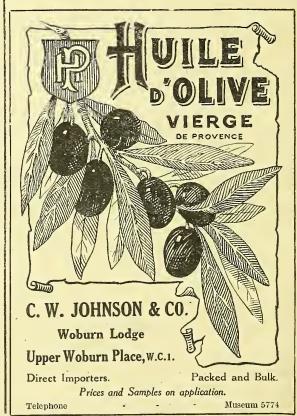
Order now while supplies are available

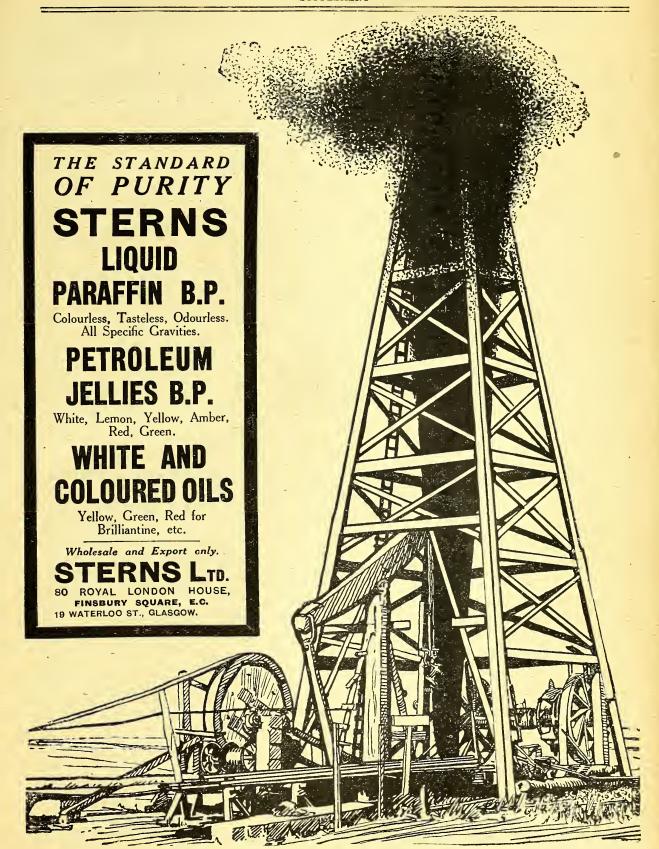
THE SEMPROLIN CO. LTD.

CARMEX HOUSE,

18 Leather Lane, London, E.C.1







# LIQUID PARAFFIN B.P. 1914 EXCLUSIVELY REFINED FROM RUSSIAN CRUDES. ALL GRAVITIES. HIGHEST VISCOSITIES. White and Yellow Tasteless and Odourless. Natural Filtered and Opaque. "JASMINE WHITE OILS Chem. Pure, Water-White, BRAND" FOR MANUFACTURING PURPOSES. LUBRICATING OILS FOR ALL PURPOSES. All Our Products are Guaranteed of Finest Qualities and Our Prices are Competitive. THE PURE RUSSIAN LIQUID PARAFFIN CO., LIMITED 3 ST. HELEN'S PLACE, LONDON, E.C.3. LIQUID PARAFFIN B.P. 1914 EXCLUSIVELY REFINED FROM RUSSIAN CRUDES. ALL GRAVITIES. HIGHEST VISCOSITIES. White and Yellow Tasteless and Odourless. Natural Filtered and Opaque. "JASMINE WHITE OILS Chem. Pure, Water-White, BRAND" Tasteless, Odourless. FOR MANUFACTURING PURPOSES. LUBRICATING OILS FOR ALL PURPOSES. All Our Products are Guaranteed of Finest Qualities and Our Prices are Competitive. THE PURE RUSSIAN LIQUID PARAFFIN CO., LIMITED 3 ST. HELEN'S PLACE, LONDON, E.C.3.



ENQUIRIES SOLICITED FOR ALL GRADES OF LUBRICATING OIL, SEED OILS, TURPENTINE, Etc.

Telephone: Avenue 3820.

Telegrams: "Tallowdom, London."

FRANCIS F. FOX & Co.

BRISTOL & BIRMINGHAM

# OILS CHEMICALS DRYSALTERY

Prices on Application.

TELEGRAMS—
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"FOX BIRMINGHAM."

TELEPHONES—
BRISTOL: 19.
BIRMINGHAM: MIDLAND 293

## Spirits Wine

all strengths to

## Absolute Alcohol

Try the "Extra Rectified" for your Perfumery,

Duty Paid

and

Duty Free

for

Export

and

Scientific Purposes.

## Chemists' Wines

Sherry, Port, Meat and Malt, Orange, Orange and Quinine

White Cross Whiskies Scotch and Irish.

**Write for Samples and Quotations:** 

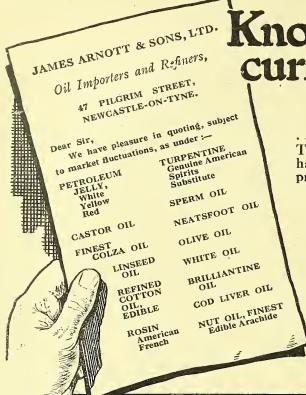
## Jas. Burrough Ltd.

E1 Cale Distillery, Hutton Road, LAMBETH, S.E. 11.

Telegrams: "BURROCALE, PHONE, LONDON."

Telephone: HCP 3436 (3 lines).

Established at Chelsea 1820.



Know the lowest current prices

> ... by means of our monthly price list. Those who receive this list every month have at their finger-ends the lowest current prices at which the oils they need can be bought.

> > All qualities are in accordance with B.P. Standard requirements. Special manufacturing care ensures the minimum of variation.

Send a postcard for full details; your name will be added to the list of those who regularly have these useful lists. No obligation is entailed. Write now!

#### JAMES ARNOTT & SONS Ltd.

Head Office: 47 Pilgrim St., Newcastle-on-Tyne.



LIQUID PARAFFIN B.P. TOILET PARAFFIN BRILLIANTINES OLIVE OILS HONEY **EUCALYPTUS OIL** 

Send your enquiries to

REDDGRAVE BUTLER & CO., Ltd. Park Lodge, Forest Lane, Stratford, London, E.15

MAWSON'S

OPTIMUS FILTERS

The most efficient household filter.

Made in different sizes in earthenware, glass and tourist patterns.

Stocked by leading wholesalers.

Write for terms to the manufacturers.

MAWSON FILTER COMPANY

(MAWSON & PROCTOR, LTD.)

NEWCASTLE-ON-TYNE.

#### SALVO

The Perfection of Petroleum Jelly MANUFACTURED SOLELY BY

THE DEE OIL COMPANY, Ltd.

D 23/24, EXCHANGE BLDGS., LIVERPOOL. Telephone: Central 3859. Telegrams: "Cestrian Liverpool."

Packed in barrels, kegs and smaller packages according to requirements.

Other Grades
PETROLEUM JELLIES, WHITE BASES, ETC.

Samples and prices on application.

" OLEUM DEELINÆ," a certain cure for Eczema.

Sasso

Olive Oil



Preferred throughout the world

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ONEGLIA, ITALY.

The Largest Olive Oil Factory in Italy.

GRAND PRIX, GENOA 1914: SAN FRANCISCO 1915.

WHOLESALE ONLY.

15, 16, 17, JEWRY STREET, LONDON, E.C. 3.

Telephone: AVENUE 1365 (3 lines). Telegrams: "BISSULA, TELEW, LONDON." Telewriter: WALBROOK 596.

NEW YORK. GLASGOW.

# THE METHYLATING CO., LTD. for METHYLATED SPIRIT. KINNAIRD HOUSE, Pall Mall East, LONDON, S.W. 1. Telephone: Regent 5621. Telegraphic Address: "Methcolim, Phone, London."

<u>kan parakan kangan kangan</u>

## PETROLEUM JELLY.

Gough, Kidston & Co.

Chemical Manufacturers. Tanning & Dyewood Materials & Extracts, Gum & Wax Merchants, Minories 2666 and 2667.

Tei. Add.:
"Kidstonism.
Bilgate, London."

43/45 Gt. Tower Street, London, E.C. 3, Tel. No.: Hop 2029

BERMONDSEY.

#### REAL SILVER LEAF

As supplied for many years to the leading Houses for Pills, Cachous, &c.

We also supply GOLD LEAF AND GOLD POWDERS

WHOLESALE ONLY.

E. WINTER & CO., LTD.

Head Office: 64 Cheapside, London, E.C.2. Telephone: Central 935

Good Colour. Suitable for Creams Toilet Preparations, Etc.

SAMPLES & PRICES ON APPLICATION TO H.N.S. 26, Crosvenor Gardens, London, S.W.1

#### Alcohol for Industrial Purposes Duty=Free Spirit.

The Industrial Spirit Supply Company, Limited. Agents: HONEYWILL BROS., Ltd., 79 MARK LANE, LONDON, E.C.3.

## ADEPS LANÆ,

THE FINEST BRITISH LANOLINE PRODUCED

IS MANUFACTURED BY

#### THE PHARMACEUTICAL LANOLINE

Carnwath Road, Fulham, London, S.W.6.

Telephone: Putney 42.

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No Pharmacy or
Pharmaceutical Laboratory
is complete without
a copy of

## THE BRITISH PHARMACEUTICAL CODEX 1923

THIS NEW CODEX IS BY NO MEANS A REPRINT.

Each monograph has been carefully reviewed in the light of recent pharmaceutical research, and thousands of additions and alterations have been made.

Previous editions are, therefore, completely superseded, and a copy of the new Codex is a necessity for everyone associated with Pharmacy and the Drug Trade.

PRICE 30/= (Postage 9d. extra)

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All the newer medicaments are fully dealt with and information given on such subjects as

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Surgical Dressings B.P.C.

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On Sale July 2nd. Price Thirty Shillings (net)

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LONDON, W.C.1.

## 100 YEARS

## JOHN & E. STURGE, LTD.

Established 1823.

CITRIC ACID, B.P.
Citrate of Potash, B.P.
Soda

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Tartrate of Potash, B.P. " Soda

PRECIPITATED CHALK

All densities Special Grades for Dentifrices.

BICARBONATE OF POTASH, B.P.

Carbonate of Potash, B.P. ,, exsicc.

#### EFFERVESCING SALINES

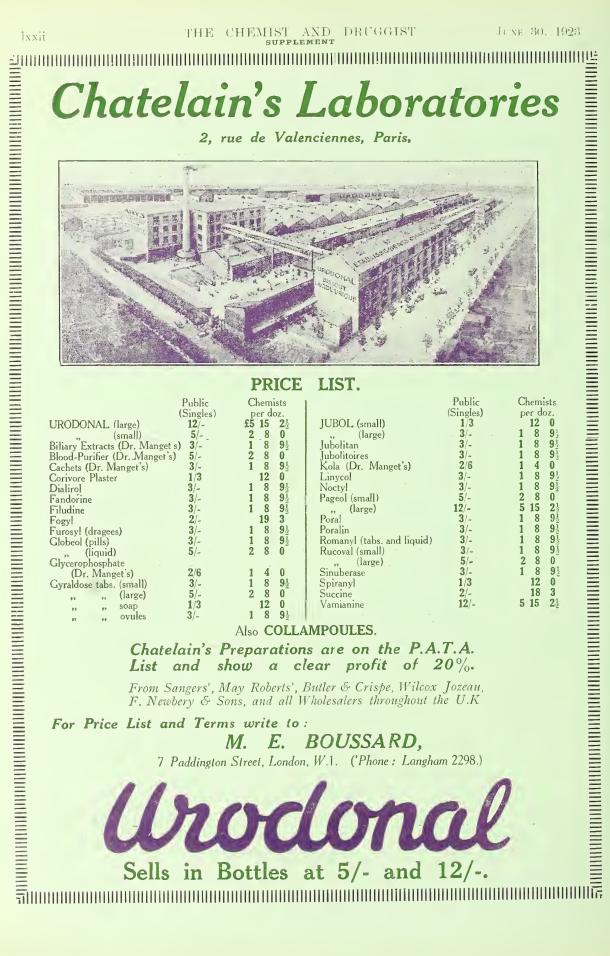
Bold Granules, Powder or Fine Grain.

FLUID MAGNESIA, B.P.

Lac. Magnesia, U.S.P.



Wheeley's Lane, Birmingham



	Public	Chemists	1	Public	Chemists
	(Singles)	per doz.	William Color	(Singles)	per doz.
URODONAL (large)	12/-	£5 15 2½	JUBOL (small)	1/3	12 0
" (small)	5/	2 8 0	,, (large)	3/	1 8 9 2
Biliary Extracts (Dr. Manget s)	3/-	1 8 9½	Jubolitan	3/-	1 8 9½
Blood-Purifier (Dr. Manget's)	5/-	2 8 0	Jubolitoires	3/-	1 8 9½
Cachets (Dr. Manget's)	3/~	1 8 9½	Kola (Dr. Manget's)	2/6	1 4 0
Corivore Plaster	1/3	12 0	Linycol	3/~	1 8 9½
Dialirol	3/-	1 8 $9\frac{1}{2}$	Noctyl	3/-	1 8 9 1
Fandorine	3/-	1 8 9 3	Pageol (small)	5/-	2 8 0
Filudine	3/-	1 8 9 1	,, (large)	12/-	5 15 23
Fogyl	2/.	19 3	Poral	3/~	1 8 9
	3/	1 8 9	Poralin	3/-	1 8 9
Furosyl (dragees)	2/	1 8 9	Romanyl (tabs. and liquid)	3/-	1 8 9
Globeol (pills)	3/-	2 8 0		3/-	1 8 9
,, (liquid)	5/-	200	Rucoval (small)	5/-	2 8 0
Glycerophosphate	0.10	4 6 0	(large)		
(Dr. Manget's)	2/6	1 4 0	Sinuberase	3/-	1 8 9
Gyraldose tabs. (small)	3/	1 8 $9\frac{1}{2}$	Spiranyl	1/3	12 0
,, ,, (large)	5/-	2 8 0	Succine	2/-	18 3
,, soap	1/3	12 0	Vamianine	12/-	5 15 $2\frac{1}{2}$
, ovules	3/~	1 8 9½			



NO matter how satisfied you may be with the existing brands of Malt Extract or Malt Extract with Cod Liver Oil you are at present selling, here are good reasons why you should not fail to consider adopting the Malt Extract Products supplied by the "House of Wander'

We are one of the largest manufacturers of Malt Extract in the country. Only the finest English grown barley (malted) and the purest Norwegian Cod Liver Oil are used. Manufacture takes place under the best hygienic conditions at our up-to-date factories in the beautiful country district of King's Langley, Hertfordshire.

Prices compare favourably with any on the market. Quality is second to none, whilst our service in showcards and selling leaflets has won marked approval.

Our products possess the dignity and quality to attract new customers and to effect prompt sales. Obtain a sample of our manufacture, and in your own interests and those of your customers, submit it to analysis with others. Give us the opportunity to quote for your requirements.

A. WANDER Ltd., 45, Cowcross St., London, E.C.1. Works: King's Langley, Herts.

WE OFFER YOU THE CHOICE OF A WIDE VARIETY OF BEAUTIFUL L'ABEL DESIGNS. SOME ARE PRINTED IN GREY & GOLD. ALL ARE DIGNIFIED AND SALES-COMPELLING

WRITE FOR THE WHOLE RANGE AND MAKE YOUR CHOICE.



MEDARI NUTTED BURTER & THE DESER



ATABLE DIGESTIVE

BARREL

BUILDS UP DELICATE GENTHUM

## SPECIAL NOTICE

## I. S. H. BENJAMIN & SON,

Sponge Importers and Merchants,

#### 12, York Street, City, GLASGO

Telephone: -- CENTRAL 8031.

**ESTABLISHED** 1899.

Telegrams:—
"SPONGE," GLASGOW.

X/E have much pleasure in informing our numerous customers and friends that, owing to the extension of our growing business, we have been compelled to take additional commodious premises at York Street, where, in conjunction with this advertisement, we are making a special show during this fortnight. The very best value in sponges, etc., will be shown.

HONEYCOMB TURKEY

from 4d. up to £3 3s. each, from 6d. up to £2

Etc., Etc., Etc.

Your Inspection is Cordially Invited.

#### Special 1923 SPONGE SHOW CASE CABINET. Improved Pattern.



Open. Regd. No. 579,484

The best, most compact, most effective Show Case, and the cheapest ever designed, Registered Design.

designed, Registered Design.

Not a Silent Salesman Show Case, but one that increases trade, almost speaks; shows Brushes, Soaps and Sponges, Loofahs, Bath Gloves, as no other Show Case can do, and, above all, couvenient to sell from. Will gladly send on approval or refer to customers already having one. Have sold hundreds up to date, and all praise it, as the followed.

lowing testimonial from a firm of chem-

lowing testimonial from a firm of chemists to whom we have sold one, shows [Copy of letter received.]
Dear Sir,—Enclosed find cheque in payment of A/e for Sponge Case. We are very pleased with the Case; it is the thing we have been looking for for years. Most of the Sponge Cases on the market are practically useless for selling from, as the sponges are too much mixed up, but with this one we can get any size we want without the least trouble.—Yours faithfully.

H.E.B. Yours faithfully,



Closed. Regd. No. 579,484

Invented and Designed by I. S. H. BENJAMIN.

Our customers are supplied with these at cost price as we find this to our mutual advantage. Cost Price:— £10 nett.

(Subject to probable reduction.)

Telegrams: - "SPONGE," GLASGOW.

Telephone: - CENTRAL 8031.

### I. S. H. BENJAMIN & SON 12, York Street, City, GLASGOW

Always at Your Service and Commands.



## LAYOCLEAN

#### THE ODOURLESS LAVATORY CLEANSER

You have only to recommend Lavoclean *once* to each customer. After that, she *buys it regularly*—and recommends her friends to do likewise.

Lavoclean is a thoroughly *STANDARDISED* product. It satisfies your customers—creates for you an ever-widening circle of sales and goodwill—through its constant efficiency and operation. The millionth tin is just as reliable and satisfactory in use as the first.

This one fact alone is sufficient to justify the public's growing preference for Lavoclean. Add to this, however, the fact that a 20-oz. tin costs only 1/3, and it is easy to understand the increasing public demand for this household necessity. (Shortly a National Advertising Campaign will enlarge and intensify this demand.)

If you haven't already introduced Lavoclean to your customers, lay in quite a small stock, and begin to do so forthwith.

Retails at 1/3 per 20-oz. tin.

""

""

""

Trade 11/3 per doz. nett.

""

4/6 "

""

""

(of all Wholesalers).

Distributors:

### BUTLER & CRISPE

80/82 CLERKENWELL ROAD, LONDON, E.C.1

(to Chemists and Druggists-London Area-England and Wales)

Manufactured by CHARLES WALL LIMITED, GLOBE WORKS, GRAYS, ESSEX

## "Steel Glass" Flask

## A seasonable, profitable and quick-selling line.

It will pay you to send an order to-day for "Isovac" steel-glass vacuum flasks, for the following reasons:—





¶ 3. The "Isovac" is stronger than any other flask on the market. Boiling liquids can't crack it. Dropping or jolting won't break it. It outlasts seven ordinary flasks. The reasons for its great strength are graphically illustrated in the diagrams.

4. The "Isovac" has been tested by many press representatives, who have described it as "a revolution in vacuum flasks"—"practically unbreakable"—"ever so much better than others of the type"—"the last word in vacuum flasks," etc., etc.



THE ORDINARY VACUUM FLASK



THE ISOVAC-STEEL GLASS

#### Made in three finishes—all 1 pint capacity.

No. 1010—Green body, aluminium mountings, 60/- per doz. Sell at 7/6 each.

No. 1013—Green body, nickel mountings, 84/- per doz. Sell at 10/6 each.

No. 1016—All nickel, 108/- per doz. Sell at 13/6 each.

#### L. REES & CO., 12, New Union Street, London, E.C.2.

Telegrams: Elreesonia, Ave. London.

Telephone: London Wall 7004 (4 lines).



### ARTHUR BERTON LTD.

Surg	ical
Dr	essings

B.P.C. Standard for N.H.I. Work. Bandages, Lints, Gauzes, Cotton Wools, Gauze Tissue Pads, Swabs, Plasters, etc.

Chemists' Vacuum Flasks, Belts, Mirrors, Bath Gloves, Sundries | Bathing Cap Holdalls, etc. Bathing Caps, Powder Puffs, Sponge Bags.

## Toilet

Combs and Brushes of every description. Tooth and Face Powders, Tooth Paste, Requisites | Manicure Sets, Scissors, Forceps, etc.

## Sickroom

Thermometers, Bed-pans, Urinals, Feeding Cups, Glass Measures, Enemas, Syringes, Utensils | Douches, etc.

## Rubber

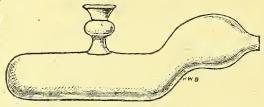
Hot Water Bottles, Sheetings, Beds, Air Cushions, Ice Bags, Sponges, Teats, Valves, Articles | Soothers, etc.

#### SHOWROOMS:

15 & 17 Worship St., LONDON, E.C. 2. 84 Miller St., GLASGOW

AND

36 Chapel Street, Victoria Bridge, MANCHESTER.



MANUFACTURERS:

Eye Cups, Spirit Lamps, Clinicals, Drop Bottles, Feeders, Breast Exhausters, Syringes, Urinals, Lotion Jars, Tumblers, Medicine Spoons, Pipettes, Urinometers, Sputum Flasks, Shop Rounds, Measures, Bottles, Chalks, Breast Shields, Funnels, Hydro Jars, Rain Gauges, Sprays, Lactometers, Test Tubes, Etc., Etc.

WRITE FOR ILLUSTRATED PRICE LISTS.

W. BUSH & Co. Ltd., 32, 34, 34a Commercial St., LONDON, E.1



KNOWN ALL OVER WORLD AS STANDARD LIQUID PLASTER.

#### TRADE PRICES.

Retail Price. Trade Price. 101d. Pocket Size... 8/5 doz. 2/- Medium Size ... 19/2 ,, 28/91 ,, 3/- Physician's Size £3 and up Carriage Paid.

Order through your wholesaler or direct

Sole Agent for British Isles and Colonies-

J. E. GARRATT. 96 Southwark Street, London, S.E.I.

flat foot, &c. Worn comfortably and uno footwear. Light and resilient to the foot.



Foot Comfort Appliances

DR. SCHOLL'S
FOOT-EAZER.

"Scholl" goods are nationally advertised. Display them in your window and get your share of the demand we creete.

Write to-day for full particulars. The SCHOLL MFG. CO., Ltd., 1-4 GILTSPUR ST., E.C.I.

#### EXCELSIOR CREPE BANDAGES. FAST EDGE.



GIMBER'S EXCELSIOR

CREPE BANDAGE

An Elastic Bandage, containing no Indiarubber. Superseding Elastic Stockings. Webs, Bandages, and at half the cost.

Three sizes, about 2, 23, and 33 inches wide. Excelsior Crepe Addominal Binders—useful after many abdominal operations, and for ladies after confinements. Two sizes: 8 & 11 in. wide.

CAUTION.—Beware of fraudulent and useless imitations, and reject all Bandages not bearing the above Trade Mark on the Wrappers.

Wholesale of

W. GIMBER & SON, Surgical Bandages and Instrument Makers, And of all Wholesale Druggists, Chemists, Surgical Instrument Makers, &c. Telephone: New Cross 1601. Descriptive Circular and Price List on application.

## ZORBO Reg. Brand

Surgeon's Superfine Quality

Surgical Dressing has been introduced with a view to meeting the demand for a really high-class cotton wool of British Manufacture.

It is made only from long staple cotton, is highly absorbent, and free from all impurities, and through every stage of manufacture the greatest care has been taken, and quality has been the first and only consideration.

To ensure the retailer a reasonable profit, and to protect his customers from the substitution of inferior qualities, "ZORBO" Cotton Wool has been placed on the P.A.T.A. List, so that our friends may have every confidence in pushing this All British Line.

#### SAMPLES ON APPLICATION

#### P.A.T.A. PRICES

				ı-lb.	8-oz.	4-0Z.	2-0Z.	I oz.	
P.A.T.A. Public Pric	e. PACKET	rs	•••	4/6	2/6	1/4	9d.	6d.	each
Wholesale Price to R			•••	35/-	18/2	9/4	5/-	2/10	doz.
P.A.T.A. Public Pric	ce. CARTON	NS	•••	5/-	2/9	1/8	1/-	7½d.	each.
Wholesale Price to R	tetailers'		•••	37/-	20/-	10/9	5/10	3/2	doz.
P.A.T.A. Public Pric	e. SEALED	TINS,							
	STERILI	ZED		5/6	3/3	2/-	1/6		each.
Wholesale Price to R	tetailers		•••	42/-	22/6	12/6	8/-	_	doz.
STERIL	IZED IN SEA	LED (	TASS	BOT	TLES.	2-oz.	ONLY.		

P.A.T.A. Public Price each. Wholesale Price to Retailers per doz.

SOLE MANUFACTURERS:

#### SON. LTD. BAILEY & Stockport. Marriott Mills. Street

MANUFACTURERS OF SURGICAL DRESSINGS.

Order through your usual wholesaler.

### GLAD FEET MAKE A GLAD HEART!

You can give your Customers both and secure the satisfaction of QUICK RETURNS and BIG PROFIT by selling:

"SPEEDWELL" **BORACIC SOCKS** 

Retailed at 61d.



#### "BULL DOG" **BORACIC SOCKS**

Retailed at 41d.

Attractive Envelopes and Show Cards, also handsome Show Cases with Divisions for Sizes. Genuinely and liberally medicated. Exclusively Chemists' and Druggists' Lines. Send card for Samples and Special Offer.

When ordering from WHOLESALE HOUSES order Socks BY NAME.

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Retailed at 9d. A REAL FOOT PREPARATION. Sell the Best and the most profitable also.

#### "OUIKURE" BUNION Ointment.

Retailed at 1/- (Tins and Cartons).
Au Iodized Preparation of great potency that can be honestly recommended. Takes away all Swelling and Inflammation, and reduces the worst cases. Wonderful reports from all quarters.

R. H. ALLEN & CO., Manufacturing Chemist, Sydenham, London, S.E.26.

Telephone: Sydenham 2220.

Irish Free State Agents: Messrs. May, Roberts & Co., Dublin.



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Overton Smile.

SURGICAL and CHEMISTS' SUNDRIES.

"INGOT"

Quality and packing command ready sales and repeat business, which can only be obtained from

#### YOUR PHARMACY.

Allow us to quote with samples when you are next buying.

#### WILSON (RUBBER) GLO

(Advertised in "The Lancet,")

SURGICAL, OBSTETRICAL, AUTOPSY, ACID, ELECTRICAL (10,000 volts), HOUSEHOLD. FINGER COTS.

#### SUPPLIES BY RETURN from STOCK

Enquiries (Wholesale and Export) ta :-

The only accredited Agent in Great Britain for THE WILSON RUBBER CO., CANTON, O., U.S.A. The largest exclusive manufac-turers of rubber glaves in the world

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## SURGICAL DRESSINGS

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Telephone: 2112 Stockport,

Telegrams: "Haynes."

Code: ABC, 5th Edition.

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## ZEAL'S

CLINICAL THERMOMETERS

REGD.



THE "REPELLO"(REGD.)



RECL.

TRADE MARK.

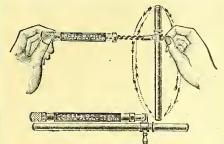


NO SHAKING DOWN REQUIRED

MPROVED BROAD NDEX

SEMI-MAGNIFYING.

EASY TO READ ZEAL'S PATENT No. 169104/20



RESETTING CASE

MPROVED

RED ABOVE NORMAL

IDEAL FOR **FAMILY USE** 



REGD.

TRADE MARK.

MAGNIFYING CLINICALS THE ORIGINAL

GUIDE

IN FOCUS.



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BEWARE OF IMITATIONS. None are genuine without our Trade Mark-A CERTIFICATE OF GUARANTEE IS ISSUED WITH EACH INSTRUMENT.

INVENTORS AND MANUFACTURERS:

KINDLY NOTE NEW ADDRESS-77 ST. JOHN ST., LONDON, E.C.1

TELEPHONE: CLERKENWELL 5202.

EST. 1888.

Telegrams—
"ZEALDOM, SMITH, LONDON,"

REGD.



TRADE MARK.

## J. H. Haywood, Ltd.

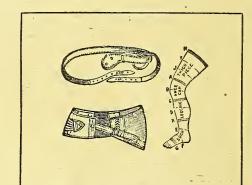
CASTLE GATE, NOTTINGHAM

ESTABLISHED 1833.

#### Specialities :-

ABDOMINAL BELTS, TRUSSES, SUSPENSORY BANDAGES, BRACES, ELASTIC WEB BANDAGES, DRUGGISTS' SUNDRIES.

Inventors of SEAMLESS ELASTIC HOSIERY.



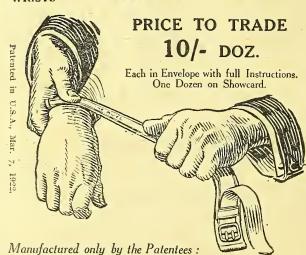
## Surgical Appliances Manufacturers

ONE SIZE ONLY

FITS ALL WRISTS

## How to fit the "KUTE" WRIST SUPPORT

SIMPLE
PRACTICAL
EFFICIENT
COMFORTABLE



MACSONS LIMITED UNION STREET, BLYTH NR. NEWCASTLE-ON-TYNE.

The Kute Wrist Support fits any wrist, and pressure can be adjusted to suit the needs of the individual wearer.

The method of fixing is very simple, but a second person is required if the Kute is to give the best results. The fitter's thumb should be placed on the free end of the elastic web on the back of the wrist as shown in illustration, and with the other hand the web should be stretched and wound round the wrist, then the narrow band wound round this elastic and secured by means of buckle. If the elastic web is too long, it can be overlapped. The Kute Wrist Support sustains this pressure until taken off. It is a scientific invention to support and strengthen the wrist, and is fully protected by letters patent.

Patented in England. Patent applied for in the Dominions and other countries.

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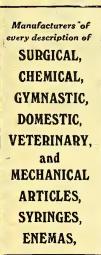
SOLPORT BROTHERS, Ltd. 184 to 190 Goswell Road, E.C.1 and through all Wholesale Houses,

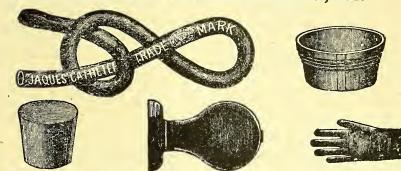
## WM.WARNE & Co.Ltd. INDIA - RUBBER

MANUFACTURERS.

Patentees of the New Moulded Enema, &c.









water beds
and
cushions,
thread,
hose, tube,
tobacco
pouches,
mats, bands,
waterproof
Garments,
&c.





Manufacturers of every description of INDIA-RUBBER

29 GRESHAM ST., LONDON, E.C.2



WHOLESALE AND EXPORT ONLY

MADE IN

WOOL

**WOOL & COTTON** 

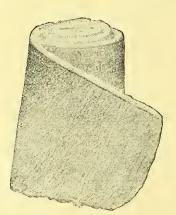
and

ALL COTTON

FOR ALL PURPOSES AND ALL CLIMATES.



## MORNICA REGD. CRÉPE BANDAGES



Observe the soft crêpe touch combined with strength.

neatly packed as above. Practically invisible, cheap, rubberless, washable, they are INVALUABLE FOR VARICOSE VEINS.

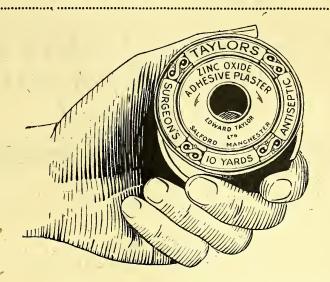
Norvic B.P.C. Bandages are guaranteed to comply with all requirements of the British Pharmaceutical Codex.

Sole Manufacturers-

GROUT & CO., LTD., Gt. Yarmouth.

London Agent-

T. S. Eastaway, 35 Wood Street, E.C.2.



## Specify "TAYLOR'S"

WHEN ORDERING

## Medical and Surgical -PLASTERS-

ILLUSTRATED PRICE LIST ON APPLICATION.

(Supplies obtainable from all the leading Wholesale Houses.)

#### EDWARD TAYLOR, LTD.

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21 Ely Place, Holborn, E.C.1. (Fully Stocked.) Telephone: Holborn 4637. Telegrams: "Roborano Smith, London."

Also at BELFAST, NEW YORK, SYDNEY.

ESTABLISHED OVER 76 YEARS.

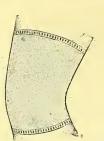
When better Plasters are made—TAYLOR'S WILL MAKE THEM

## The SURGICAL HOSIERY Co. Ld.

(Department B), RUSSELL STREET, NOTTINGHAM.

Manufacturers and Patentees of

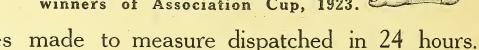
## SURCO SEAMLESS HOSIERY



In Light qualities for Summer wear, or Stout for hard wear.

Price List and Measurement Forms on Application.

Knee Caps as supplied to Bolton Wanderers, winners of Association Cup, 1923.





## Make room in your window

for this new Display—the handsomest we have yet produced. The shining nickel Thermos Flasks against the vermilion stand make a magnificent attraction. It will help you to sell the higher-grade Thermos Flasks—with a proportionately greater profit.

Write us for descriptive leaflet.

## THERMOS

LIMITED

12/14 Denman St., Piccadilly Circus London, W. Telephone: Regent 2578 HUUUUUUUUUUUU



Telegrams: "BELTRUSS,"
Telephone: RICHMOND 1557.

Partners { E. HEWARD. W. SUTCLIFFE. R. H. HEWARD.

CONTRACTORS TO H.M. GOVERNMENT.

THE

## R. H. Heward Company



## Surgical Instrument, Appliances and Bandage Manufacturers.

CROWN ROAD WORKS, TWICKENHAM.

ENGLAND.

Sole Agents for the United Kingdom of Gt. Britain, Ireland and the British Dominions of the Celebrated CREPE VELPEAU BANDAGES.

Manufacturers of Every Description of

Half, Three quarter and Full Circular Steel Spring Trusses.

Rubber Covered Steel Spring Trusses.

Vulcanite and Celluloid Trusses.

Abdominal, Supporting and Post Operation Belts.

Elastic Hosiery. Surgical Corsets. Shoulder and Chest Expanding Braces.

Athletic Slips and Jock Straps. Abdominal Supports and Protectors.

Suspensory Bandages. Elastic Webs. Crèpe Bandages. Chest and Lung Protectors Hot Water Bottle Covers.

Sole Proprietors of the perfected "DOMINAL" Ear Cap. Inventors and Patentees of the "ABDOM" Patent Double Truss, 128487/18.

TRUSS SPRING MAKERS TO THE TRADE.

## Companion Lines



#### SOOTHERS

Made of purest India Rubber.

No taste or smell.

Practically indestructible. The most perfectly made all-rubber soother ever offered for sale.

#### PLIC' TEATS

REGD.

Made of purest India Rubber. In 8 different patterns. Each in separate carton. IN BOXES OF 3 DOZEN.

Ask your Wholesaler for "Simplic" REGD.



## "STANDARD" HYGIENIC FEEDERS IN CARTONS

(as illustrated)
7/- per doz.
78/- for 1 gross lot.

## "HOWARD" CLOTH CLEANERS

3/- per doz.

2/9 in 3 doz. lots.

30/- in gross lots.





#### CORN VELVET

(in the "Cornfield" packet as illustrated)

 $4\frac{1}{2}$ d. size, **3/-** doz.  $10\frac{1}{2}$ d. ,, **6/6** ,,

### THOMAS SWALES

20/24 Butts Court & 89 Albion Street LEEDS

#### POWELL'S THERMOMETER

are Manufacturers (not Factors) of

Clinical, Chemical and Industrial Thermometers, Hydrometers, etc. and supply only their own productions.

DOMINION BUYERS wishing to be sure of getting their indents (especially for Clinical Thermometers) executed with ENGLISH goods will please note our address, and that we are the only firm of this name in the Thermometer Trade.

#### ERMOMETER Co., 55 Hatton Garden, London, E.C.1

Telephone: -Holborn 1185.

ESTABLISHED 1901.

Lists on application.

REDUCED PRICES

#### LONDON BEST QUALITY MADE

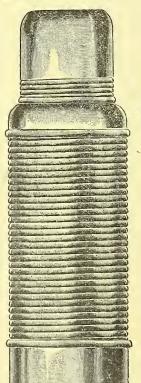
Tested and Stamped at N.P.L. Complete in Metal Cases. 

Send Order for 2 doz. and receive Attractive Showcard. 5% Discount for cash with order. Special quotations for large quantities.

DAVIS & CO., Mortimer House, 41 Mortimer St., W. 1

'PHONE: MUSEUM 3369.





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LARGE VARIETY ALWAYS IN STOCK IN VARIOUS PATTERNS AND COLOURS Including

Japanned bodies, Aluminium cup and shoulder ditto ditto with handle to cup Solid Brass tube bodies, nickel-plated Aluminium bodies, corrugated Leatherette covered bodies, Nickel-plated cup etc., etc.

Free Cases. Free Delivered U.K. or Ireland.

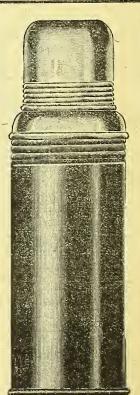
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#### COMPANY

IMPORT & EXPORT MERCHANTS,

50-51 Fore Street, LONDON, E.C.2

'Phone: London Wall 5482. 'Grams: "Owtazinify, Ave, London."



#### "MATE CLINICAL

MAGNIFYING FRONT. NATIONAL PHYSICAL LABORATORY GUARANTEE. EASY TO READ. EASY TO SHAKE DOWN.

This series of Clinical Thermometer is on the

P. A. T. A. LIST

AN ADEOUATE MARGIN OF PROFIT BEING GUARANTEED

REGISTERED No. 553038



PRICES OF THE "MATER" CLINICAL IN METAL CASES:-2 min., 4/6; 1 min., 5/6;  $\frac{1}{2}$  min., 7/- each. Wholesale ., 27/-; " 33/-; " 42/- per doz.

PERKEN, SON & CO., Ltd., 94 HATTON GARDEN, LONDON, E.C. 1.

Established 1852.

Telephone: 724 Holborn.

Contractors to H.M. Government.

Telegrams: "Optimus, Smith, London."

Write for Prices of every description of CLINICAL and OTHER THERMOMETERS



# Cellulose Wadding Highly bleached, Quality second to none Rolls or Sheets in any size or thickness to order. Rolls of 1 lb., 14 in. wide, 12 ply, in bales of 1 cwt., always in stock. OWEN SHIRLEY, 124/127 Minories, LONDON, E.I. Sole Consignee for Papierfabrik Sacrau, Breslau.

#### BIG REPEATER.

Sells on sight. Gives Satisfaction. Pays well.

VERSAF

Pure jelly filled, non-collapsible transparent nipple. The "Eversafe" is the Pacifier that is Different, and it is still on Top. Perfect quality and workmanship. Baby's delight and Mother's favourite because she knows it is safe -baby cannot pull it apart.

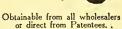
Patented everywhere.

Present Rates: No. 2 4d. line 2/9 doz.

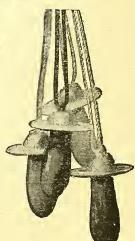
" 2C 6d. " 3/2 " 3/4 " 2E **6**d. "

3  $7\frac{1}{2}$ d.,, 4/8, Sample order, 3 doz. assorted:

Send 10/6, post free.



F. SCHUTZE & CO., LTD. BLACK BULL WORKS, LONDON, N. 7.



## "Oh Movol-yes-I'll take a tube"



All your customers know Movol. The box displayed on the counter is all that is needed to effect the sale. And the sale of every tube brings to you a net profit of

381/2%



#### STAIN REMOVER



This little figure tells your customers about Movol.

Advertisements are appearing regularly in the "Daily Mail," "Daily Sketch" and "News of the World,"

Cost Price Price Price Bonus Tubes

2 doz. 6d. Tubes 8 ~ 0 12 ~ 0 2 6d. Tubes 1 ~ 0

1 doz. 1/~ Tubes 8 ~ 0 12 ~ 0 1 1/~ Tube 1 ~ 0

16 ~ 0 24 ~ 0 24 ~ 0

Net profit 10/-, i.e., 38½%, 5% more than the usual profit.

If 1/- size Tubes are not desired we will supply three or four dozen 6d. Tubes with corresponding number of Bonus Tubes.

## This is no special offer but a permanent basis for the sale of Movol.

MOVOL is a splendid line for the Chemist. Easy to stock—no trouble in sale—no weighing, no measuring. We pay carriage and supply suitable Advertising Material.

Sole Makers:

Wm. EDGE & SONS, Ltd. - - Bolton

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Established 1859.

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### CLINICAL THERMOMETERS

BAROMETERS, THERMOMETERS & HYDROMETERS OF EVERY DESCRIPTION.

BRITISH M/KE THROUGHOUT.

CONTRACTORS TO ALL GOVERNMENT DEPARTMENTS.



#### PATENT

#### THERMOMETER THE ACCOSON ASEPTIC CLINICAL



#### HAS IT EVER OCCURRED TO YOU?

That the clinical you put in your mouth has just previously been used by a patient who may be sickening for, or suffering from, some contagious disease? Each time the clinical is placed in the case it becomes aseptic.

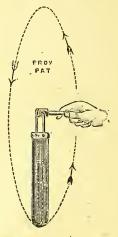
CAN BE OBTAINED FROM ALL WHOLESALE HOUSES, OR DIRECT.

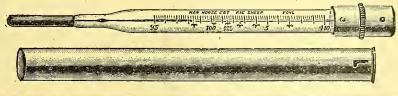
#### THE ACCOSON CLINICAL RE-SET

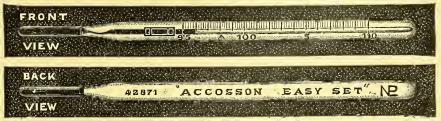
Will instantly, and without difficulty, re-set any clinical thermometer. Folds into a 4 inch length.

Wholesale - 12/- dozen

Retail Price fixed at 1/6 each.







ACCOSON WORKS, VALE RD., LONDON, N.4



Awarded the Certificate of the Institute of Hygiene. Retail maintained price 6/11. One size only—the most convenient—15" × 9". Entirely British in every particular. Write NOW!

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#### Specialities:



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ABSORBENT SPONGES AND GAUZE PADS.

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CAPSICUM TISSUE Absorbent Cotton charged with Capsicum and Methyl Salicylate.

CELLULOSE WADDING - Manufactured from pure White Pitch Pine Fibres

COMPRESSED DRESSINGS-of great convenience where storage room is limited.

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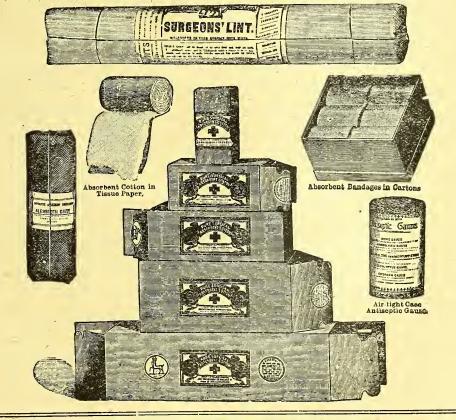
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## THE "JARASO" Personal Weighing Machine

BRITISH PATENT No. 23493/1910

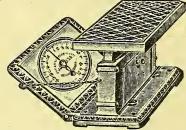
Small and Compact. Weighs from I lb. to 20 stone. Suitable for Bathroom, Bedroom, Nursery, etc. The weight is reflected automatically in the mirror.

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Brownie Gillette Razor Genuine Gillette Blades

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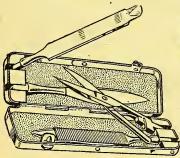
From 21/- and upwards with 12 Blades complete.

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CASE, SIMILAR TO ABOVE, CONTAINING 22/- PER SCISSORS, FILE AND SAFETY RAZOR, 22/- DOZ.

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3½" Bent & Straight Nail 8/-	$3\frac{3}{2}$ " Drapers' 6/6
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Surgical Scissors 11/-	Button Hole 10/6
NAIL FORCEPS 10	
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Made from

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Fitted with Fancy Cord Loop.

Price 7/6 doz. (Postage)

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Bermondsey.

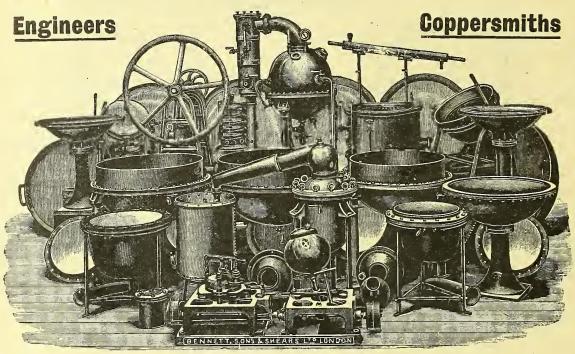
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of Plant for Manufacturers of Pharmaceutical and Fine Chemicals



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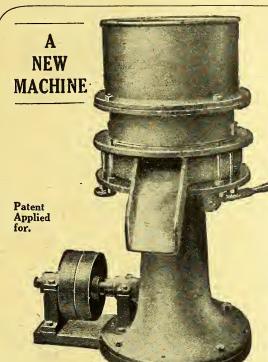
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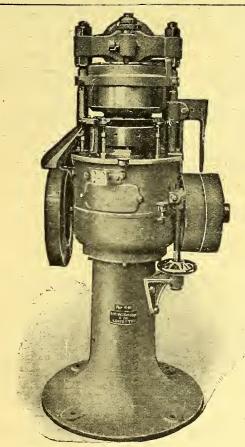
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## "SUPER SPEEDY" MILL

A combined Mixing and Grinding Mill for Ointments, Tooth Pastes, Cold Cream, Paint, Etc., Etc.

In the year 1905 the now world-famed "Speedy" Ointment Mill was invented and patented by S. W. Wilkinson, A.M.I.Mech.E. During the past 18 years it has found its way all over the world, and is now in the works of practically every British Manufacturing Chemist; successfully working and bringing the user much profit. The same inventor has now immensely improved it in the direction of greater output, better grinding, better mixing, easier cleaning and waste reduced to practically nil. The improvements are the result of 18 years' additional experience, and it is now a highly scientific mill, in fact a "Super Speedy" Mill.



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in 4 sizes, for all sizes of Tablets up to  $1\frac{1}{4}$  dia. and  $\frac{7}{8}$  deep.

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Combined or Separate Machines.



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Various sizes

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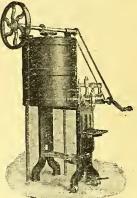
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## PATENT ROBERTS' BOTTLE FILLING **MACHINES**

requirements

We can supply machines to fill any type of receptacle with any kind of liquid or semi-liquid. Send us your requirements and ask our advice.

(BOTTLE FILLERS from 39/-)



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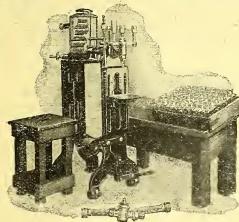
DEAR SIRS,
I had a visit from one of our customers this morning to see your machine work. I think he was very favourably impressed. He expressed great surprise at one girl and one machine doing all our filling. I told him that we could fill a gross of bottles of sauce with the machine whilst one of his girls would be filling a dozen castor oils would be filling a dozen castor oils by hand; that for his purpose the machine was ideal. What a boon your machine would be to him!

I emphasised the fact that the real rational of your machine is in the instantaneous cut-off, and for this reason the machine is always waiting on the operator, never the operator on the machine—no matter how hard you drive, the machine is ready.

—no matter how nard you drive, the machine is ready.

Hoping you may succeed in con-vincing this firm of the real merit of your most ingenious machines.

Faithfully yours,



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Messrs. W. & T. Owbridge, Ltd., Hull, write:

Four girls fill in 2 hours 80 gross  $2\frac{1}{4}$ -oz. bottles, which works out at 1,440 bottles per girl per hour. Our forewoman says, if in a racing mood, they can finish in a quarter of an hour less.

Electrical Automatic Filling Machines, Bottle-Filling Machines. Corking, Lidding and Sprinkler Fixing Machines of all Types.

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Telegrams: "Filling Bolton."

Code: ABC & Private.

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# TRUCKS, HANDCARTS. &c. Write for List CD222, W. B. STUBBS & SON (Estab.) Progress Works, Hawksworth, NOTTS

## Colton's Pharmaceutical Machinery

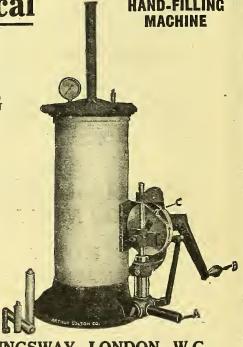
COLLAPSIBLE TUBE FILLING AND CLOSING MACHINES'

## TABLET AND PLANT

etc.

PRICE LISTS ON APPLICATION TO

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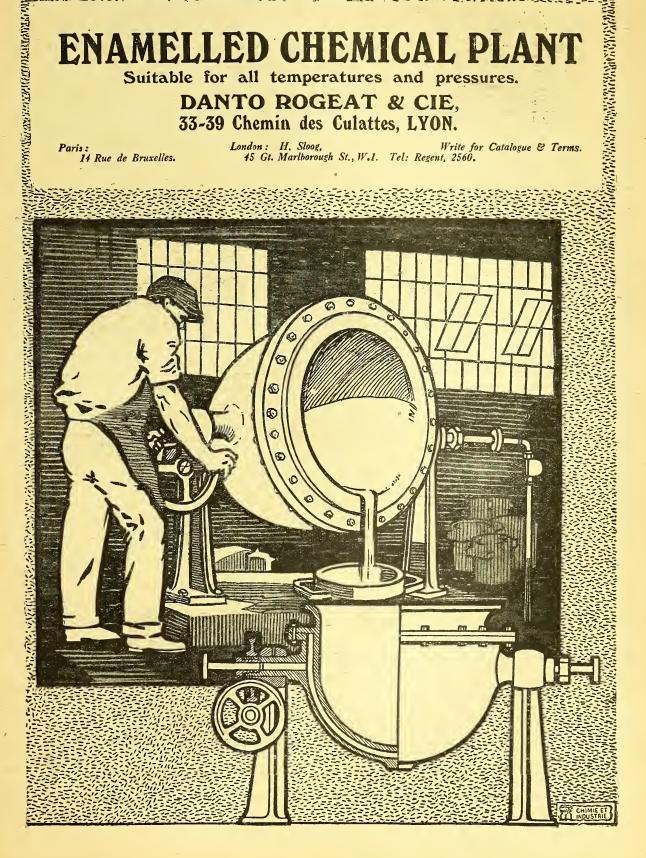
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POST ORDERS Promptly and Carefully Executed. We pay postage on all orders over 20/.. Samples and special quotations for quantities sent on request.

STOCK SIZES, 34 to 44 Chest, When writing us measure Chest over waistcoat.

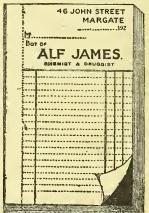
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CABINET

## A FEW of the MANY PATTERNS of GARDNER'S PATENT PID" SIFTERS

powders, and reduce to powder and sift any that contain lumps. Largely used for Drugs, Chemicals, Acids, Baking Powder, Self-raising Flour, Cattle Foods, Sugar, Colours, Sherbet, Coffee, Flour-blending, Disinfectants, and all kinds of Medicated Powders.

Also for the preparation of High Explosives.

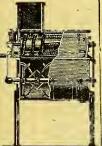


Fig. 1. Sizes for Hand Use.



FIG. 2. Power Sizes with Pulleys.



Pulley and Gear Drive. The type recommended for Power users.



FIG. 4. Large capacity Power-driven Machines.

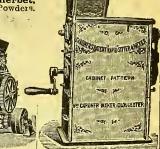


FIG. 5. For Counter use a small quantities.



**CARDNER'S Patent** "RAPID" SIFTER, MIXER, AND CRUSHER.

FIG. 6.

For breaking down large and hard lumps in Sugar,
Acids, Chicory, Salt,
Colours, Soda, small
enough to be reduced, sifted, and mixed afterwards.



**CARDNER'S Patent** "RAPID" SIFTER, MIXER, AND ESSENCE SPRAYER.

Fig. 7:

ng Liquids For adding Liquids, Essences, Flavourings, Liquid Colours, Oils, &c., to Sugar, Acids, Flour, Face Powders, Disinfectants, Seasonings, and many kinds of Powders and Crystals during Mixing.



FIG. 8.

Open Bottom Pattern.

CARDNER'S Patent "RAPID" SIFTERS (Figs. 8 to 12) (Power Sizes) sift any kind of Dry Powders, and reduce to powder any that may be lumpy, such as Tartaric Acid, Bicarbonate of Soda, Magnesia, Arrowroot, Sugar, Flour, Colours, Sheep Dip, &c.





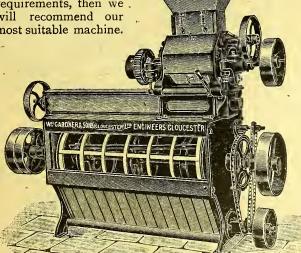
FIG. 10



FIG. 11.



Send Samples of your requirements, then we. will recommend our most suitable machine.



This is one form of

## GARDNER'S PATENT GRINDING AND DRESSING MACHINE.

For Sugars, Invalids' and Infants' Foods, Paint Colours, Crystals, Drugs, &c.

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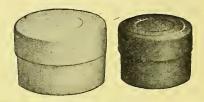
Plain, coloured and embossed in any size, gauge or shape.

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and

## PILL BOXES

have replaced the old "Willow" boxes—Greaseproof—the bottoms cannot fall out.

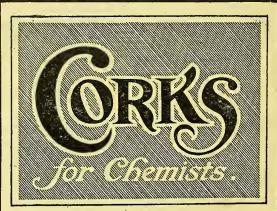


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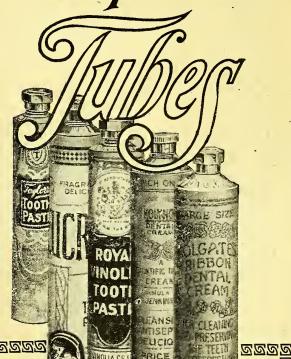
for all kinds of Bottles and Jars.

The Tonkin Metallic Capsule Co.

Proprietors: C. Olley & Sons, Ltd.

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Neat and attractive in appearance, clean to handle and easy to open (the fingers cannot come in contact with the gum) the "ROLO" is at once both useful and ornamental. Evenly spread on both sides with our special non-drying gum it is also very highly effective being in short

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THE ONLY BRITISH Manufacturers.

Sizes 7-inch up to 4 inches diameter.

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Crescent, Cambridge Street, BIRMINGHAM.

Telegrams—"ELSWAL," BIRMINGHAM.

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AND

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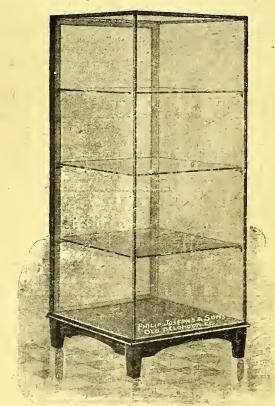
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1/6 per pot retail.

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wish to state that they intend prosecuting, without further notice, any Pharmacist who infringes on their Trade Mark LAC BISMUTHI by any form of substitution.

ALWAYS IN GREAT DEMAND.
PRICE LIST ON APPLICATION.
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Do you know where to obtain?

MADE IN FIVE SHADES.

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This popular article is largely advertised and stocked by all Wholesale Houses, 1/8 size, per post 10d. 1/4 size, per post 2/6 size, per post 2/10; 3/9 size, per post 4/3; size, 6/- doz.; 1/4 size, 12/- doz.; 2/6 size, doz.; 2/9 size, size, 6/- doz.; 2/9 size, size, 6/- doz.; 2/9 size, s 1/7; 2/6 size, per po 8d. size, 6/- doz.; 24/- doz.; 3/9 size.

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No. D21/00A. Single Wheel Magnato in polished pine case, regulator, cord and handles complete. Approx. size, 8x4x3\(\frac{3}{2}\) in. Price 15/9 each net. No. D21/0A. Single Wheel Magneto, more powerful. Approx. size, 8\(\frac{3}{2}\) x4 in. 20/2 each net. No. D21/1A. Very superior quality and extra strong. Approx. size, 10 x 5, x 4 in. Price 22/o each net.



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Recommended for Rheumatism, Obesity, Paralysis, Neuralgia, Nervous Diseases, and as a general tonic for stimulating the Nerves. In handsomely finished leatherette case lined with relvet, complete with richly nikkelide Electrodes. «£/ net. Please state voltage when ordering and whether D.C. or A£.

Fully illustrated Catalogue, A/24, of a wide range of Electrical Novelties, etc., free on request, enclosing business card or memo.

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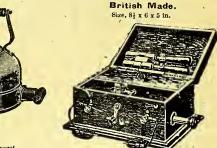
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MEDICAL COIL.

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Guaranteed to Exterminate NOT Stupefy BEETLES, COCKROACHES, CRICKETS, FLEAS, STEAM FLIES, ANTS, MOTHS, POULTRY INSECTS, WOOD LICE and all similar insect pests and their eggs.

Exterpest holds certificates of efficiency of Institute of Hygiene. Obtainable from your usual wholesaler.
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Enquiries invited.

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Just try to imagine a pane of glass with the flexibility of Tissue Paper and you have Cellophane—the only transparent wrapping material, absolutely air, grease and odour proof, tasteless and perfectly innocuous.

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CELLO-DRESSINGS. The only sterilisable dressing unaffected by time, heat and moisture.

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FRANCIS NEWBERY & SONS, Ltd., LONDON

WANTED-Chemists to sell 'Ready Rat Relief' & 'Outem'

FOR RAT DESTRUCTION

"Solventen" for Cockroach destruction Quick Returns. Good Profits.

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To CHEMISTS and DRUG STORES, IT PAYS to sell FARMER'S "BAITED"

PHOSPHOR PASTE

Made from an improved formula. It is the EEST RAT and MOUSE POISON

Jars 4d., 7½d., and 1/s. KINDLY ORDER from SUNDRY HOUSES.

ONE USER recommends to another.

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In the way of toilet powders POUDRE DE SANTÉ is "off the beaten track," and has not one single drawback. It is effective, convenient, absolutely harmless, pleasant to use, and neither injures nor discolours the underwear. It prevents all tendency to chafing, and completely obviates all the unpleasantness of PERSPIRATION

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In **Packets** @ 5d., 9d. & 1/3 each.

FOR QUICK CLEARANCE OF RATS AND MICE

Prepared only by BATTLE, SON & MALTBY, Manufacturing Chemists, LINCOLN.

Ofall Patent Medicine Houses @ /-, 5/6 & 9/

doz.

STOCK DESIGNS. Hornby & Co., 36, High St., Hull.

Plain Gold lacquered and Stock Design Ointment Tins.

Delivered from Stock.

# MENNEN

## Important Alterations to

## Talcum Prices & Packages

Old Style



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Old Style



#### REDUCTION IN PRICES.

REDUCED Talcum prices given below become effective to the TRADE on JULY 1st and to the PUBLIC on AUGUST 1st. This advance notice gives you two important advantages.

1. Allows you six weeks to move old stocks.

2. Enables you to purchase during July at the reduced price and to retail at the old (higher) price.

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Mennen "Toilet Powder" (Standard), "Violet," "For Men"

Talcums Trade .. 8/6 doz. Retail ... 1/
3 dozen, less 5 %. 12 dozen, less 10 %.

Quantities may be assorted. Carriage paid on minimum of 3 dozen.

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WITH the exhaustion of present stocks the well-known oval shape tins illustrated on the left will be replaced by the NEW AND IMPROVED TINS shown on the right. Contents of the new tins are guaranteed to be identical in quantity and quality with the old. The colour schemes remain the same, but the NEW SHAPE tin is more attractive in appearance and easier to handle.

## 26 WEEKS' ADVERTISING TO HELP YOU.

CONSISTENT and attractive advertising is now appearing in the "Daily Mail," "Times," "Telegraph" and "Punch," and, additionally for 26 weeks, in the local press of large centres such as Liverpool, Manchester, Newcastle-on-Tyne, Birmingham, Southampton, Hull, Bristol, Glasgow and Edinburgh.

HELP US TO HELP YOU.—Order 3 dozen assorted Mennen NOW and make a display to link up with

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New Style



New Style



## EVERY FAMILY NEEDS MENNEN.

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## CREATING DEMAND

We are out to boom the Aréco lines for which there is already a steady demand.

## Are you going to share in the profits?

The Press announcements here reproduced in miniature are

## PART OF OUR PRESS CAMPAIGN FOR JULY

Aréco lines are the highest class products attractively housed.

We value repeat orders and offer you a handsome profit and quick turnover ensured by fine Advertising. We have a very special proposition for Chemists who apply during July for full particulars.

REPRESENTATIVES WITH GOOD CONNECTIONS who wish to represent a live organisation are invited to get in touch with us.





If anticrable from the level channel, and f. 0.

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WATERHOUSE & CO
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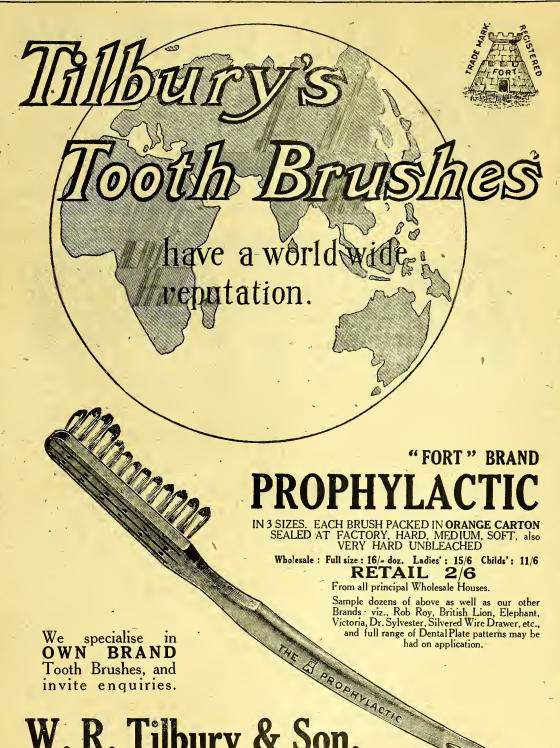
24 HOLBORN, EC.1

The Ever Young



Sole Sales Organisers for Aréco Ltd., London & Paris:

WATERHOUSE & Co. Ltd. 24, HOLBORN, LONDON, E.C.1.



W. R. Tilbury & Son,

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ESTAB. 1880

Phone: Dalston 1794.

Season-1923





**GUARANTEED GENUINE** 

Manufacturers i

BRODR. AARSÆTHER A/S, Aalesund, Norway. LARGEST MANUFACTURERS OF COD LIVER OIL IN NORWAY.

Wholesale only.

In 25-gallon tin-lined barrels.

SOLE AGENTS FOR U.K.:

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Tel.: 12513 GENTRAL

SLACK & BROWNLOW, Town Mills, Tonbridge, Kent. BRITISH OWNED. FILTRATION THROUGH KIESELGUHR CYLINDERS OF Crystal Pure Water. ACENTS WANTED EVERYWHERE. Free from Disease Germs. Catalogue on Application.

# ZEALAND HONEY

Packed in 1's and 1's Glass & Monopots, etc.

Nature's own: Sweetmeat, Food, Stock Medicine. Guaranteed pure. the best and increase your trade.

The author of "Science of Eating" says:-"We are lengthening life by modern we are lengthening life by modern sanitation, by saving infants, etc., while killing off men and women in the early-forties with diabetes and obesity. For a hundred reasons, all of them compelling, let us eat less sugar and more Honey."

A lady shopping on the South Coast told her grocer:-

"I didn't know Honey was so nice until I tasted 'IMPERIAL BEE.' I shall always keep it on the table now."

Apply for full particulars and price; to:-

Produce and Canned Goods Dept.

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Sole European Agents for :-THE NEW ZEALAND HONEY PRODUCERS' ASSN. LTD.

The ideal milk sugar for babies. We are having direct orders from all parts of the country. Why not participate in this business?

For terms write to Proprietors

MAWSON & PROCTOR, LTD.

NEWCASTLE-ON-TYNE.

# TO GET INTO DIRECT TOUCH with the best buyers of Drugs, Chemicals, and allied products ALL OVER THE WORLD use regularly the publicity service afforded by THE CHEMIST & DRUGGIST

## BAYER PRODUCTS, LTD.

Telephone:— CHISWICK 2433.

Telegrams and Cables, BAYAPROD.



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The above-mentioned English Company has been formed to acquire the Trade Marks, Patents, etc., covering the important synthetic pharmaceutical products manufactured and marketed under the well-known "Bayer" name and "Bayer Cross" Trade Mark, among which are the products sold under the following trade marks, viz:—

ADALIN
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JOTHION, LUMINAL, MESOTAN, PROTARGOL, SAJODIN, SOMATOSE, TANNIGEN, THEOCIN, TRIONAL, VERONAL.

Price List and information pertaining to all "Bayer" products gladly supplied upon request.

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## NOTICE TO THE TRADE

The Charles H. Phillips Chemical Co., 14 Henrietta Street, Covent Garden, W.C.2, beg to give notice that on and after June 24th, 1923, their address will be—

# THE PROPRIETARIES AGENCIES LTD. 179-181 ACTON VALE, W.3

to whom this business has been transferred.

All orders and communications should be sent to this address after the above date.

# Every Drummer Dye represents the best in Home Dye manufacture

Whether your Customers want a Cold Water Dye, a Hot Water Dye, or a Dye to Boil, they will be most satisfied if you recommend them to take Drummer Dyes.

27 Colours.

Retail at 4d. each.

Keep a quantity of the free Drummer Booklets on your counter for your customers to take. These booklets together with Showcards and Trade Terms are procured from the Drummer Dyes makers.

## DRUMMER DYES



Sole Makers: WM. EDGE & SONS, Ltd., Bolton.





## FAIRY DYES

Mean Greater Turnover for You-and Absolute Satisfaction for Your Customers.

THERE is no more attractive line on the market to-day—there is no better seller—and no article has made larger strides in popular favour.

## FAIRY DYES

are now sold in glass tubes, encased in smart, clean-looking "safety-first" cartons. They are retailed at 2d. each, made in 25 popular shades and colours, and are extensively advertised in the right publications.

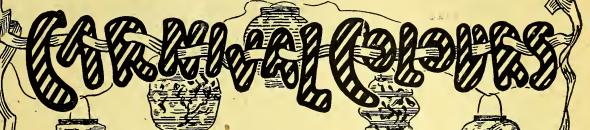
You can rely upon Fairy Dyes—for prompt delivery in any quantities—for fresh stocks—for quick, easy-to-handle, clean turnover, and as tried favourites your customers are always satisfied. See that you are supplied without delay.

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London Depot - - - 292 UPPER STREET, ISLINGTON, N.1.







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FOR ALL MATERIALS

## "Capsol-Wonder"

LEAVES LACE INSERTION WHITE NO BOILING

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THE ONLY COLD WATER DYE FROM START TO FINISH NO BOILING

## **Capsol Tints**

IN EVERY SHADE TIME—10 SECONDS NO BOILING

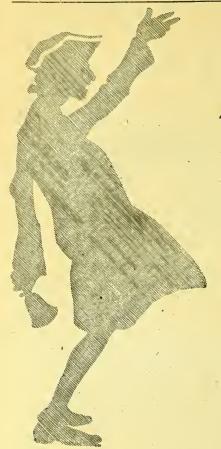
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SALES GOING UP.

Address all enquiries to Works.

"CAPSOL" SEP AVENUE, BLACKPOOL.



## ATTENTION, GENTLEMEN

Are you buying your Patents on the best possible terms? Pharmacists are prone to disparage the margin of profit allowed them by manufacturers, but are apt at times to overlook the increased profit to be made by taking advantage of the Special Terms offered for specified quantities.

The centre section of May, Roberts' Catalogue consists of 16 pages of Special Terms which will repay your attention. You will note that all the lines mentioned are in good general demand, so that the risk of overstocking is reduced to a minimum, and the quantities specified are reasonable, and well within the legitimate buying scope of most Pharmacists. The extra profit to be obtained averages 5%, a comfortable extra, which will furnish a handsome contribution to your rent account. Where the big man scores over the little one is in buying big, and there is no reason why in dealing with the quick sellers you should not follow his example.

May, Roberts & Co., Ltd.

7/13 Clerkenwell Road, London, E.C.1

And at

Dublin, Liverpool and Plymouth.

# THE CHEMIST MAND DRUGGIST

42 CANNON ST. LONDON E.C. 4

JUNE 30, 1923,

This Supplement is inserted in every copy of The Chemist & Druggist.

#### CHEMIST AND DRUGGIST SUPPLEMENT THE

#### REVISED ADVERTISEMENT TARIFF.

Businesses Wanted and for Disposal, Premises to Let, Goods for Sale, and Agencies—6/- for 50 words; every additional 10 words or less, 6d.

SITUATIONS OPEN-6/- for 40 words; every additional 10 words or less, 6d.
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Box Number

In each case replies may be addressed to a registered number or nom-de-plume, c/o this Office, at a charge of l/- extra for each advertisement. Payment,

All Advertisements are prepaid, so that remittance must accompany instructions in each case. If it be necessary to telephone or telegraph an urgent announcement this may be done, provided the money is telegraphed at the same time.

THE CHEMIST AND DRUGGIST, 42 Cannon Street, LONDON, E.C.4. tral 3617 (3 lines). Telegrams: "Chemicus, Cannon, London" (2 words).

Telephone: Central 3617 (3 lines).

## CLOSING FOR PRESS.

ADVERTISEMENTS INTENDED INSERTION IN THIS SUPPLEMENT

MUST REACH US NOT LATER THAN

#### FIRST POST THURSDAY MORNING.

## CHEMISTS' TRANSFERS.

## Messrs. Orridge & Co., 56 Ludgate Hill, E.C.

May be consulted at their Offices on matters of Sale, Purchase and Valuation.

1.—KENT (Good Residential Suburb). — Well-established Business, situate in close proximity to railway station; returns between £2,500 and £2,750; scope for extension; well-fitted shop and residence; held on lease; terms, lease, and goodwill, £400; stock and fixtures by valuation.

2.—LONDON, N.—General Retail and N.H.I. Dispensing; returns between £18 and £25 weekly at good prices; scope for increase; single-fronted shop, well stocked; six-roomed house, with garden; rent £35; price £950.

3.—LONDON, N.W.—General Retail, Prescribing and Dispensing; returns last year £1,120; double-fronted shop; vendor estimates value of stock and fixtures at £800; rent £70; sutlet house at £104 per annum; held on lease; price to be

4.—KING'S CROSS (Near).—Cash Retail Business; vcry oldestablished; returns, present rate, £28 weekly; gross profit, one-third; price about £750, or near offer would be considered.

5.—CITY.—For immediate disposal for removal, the Goodwill, Prescription Books, Stock and Fixtures of an old-established Pharmacy; further details on application.

6.—ESSEX (Suburban).—Ready-money Business; capitally situate in busy main thoroughfare; returns, present rate, about £20 weekly, with scope for increase; the shop is well fitted and fully stocked; modern residence; rent £62; held on lease; price about £950.

7.—EARL'S COURT STATION (Near).—Very old-established Business; returns, present rate, £23 weekly; scope for development under personal supervision; double-fronted shop, corner position; well fitted and fully stocked; residence sublet, giving a profit rental of £18 yearly; price about £1,050.

8.—LANCS.—Cash Retail Business, with Kodak agency; returns, £3,000 per annum, at fair prices; ample living accommodation; vendor owns the property, which he desires of selling;

price £3,250, or £2,250 without property, in which case a lease would be granted at £60 por annum.

9.—SOUTH COAST.—Good middle-class Retail and Dispensing Business, with Kodak agency; returns between £1,800 and £2,000 yearly; shop is fairly fitted and steeked; there is a residence; rent £70 per annum; held on lease; price about £1,000.

10.—WILTS.—General Retail Business, with Kodak agency; returns, about £1,000 per annum, at good prices; vendor estimates value of stock and fixtures at £350; rent 11s. 6d. weekly; further details on application.

11.—LANCS. (Large Town).—Ready-money Business, situate in working-class locality; returns, present rate, £4,000 per annum at usual prices; large shop, fairly fitted and well stocked; lease would be granted at £70 per annum, or property may be purchased for £1,000; price of business, £2,700.

12.—WILTS.—Working Partnership offered in two Businesses, capable of much extension with additional help; the half share would produce an income of about £700 per annum; both corens are entirely unopposed; the investment is suitable to a young man with energy; price £1,500; further details on application.

13.—SOUTH WALES.—General Retail Business, with N.H.I. Dispensing; returns approach £40 weekly; net profit 25%; double-fronted shop, well fitted and stocked; good living accommodation; held on lease; price £1,500, or valuation terms entertained.

14.—HOME COUNTY.—Old-established Business, Retail and Dispensing; returns average £3,000 per annum, with scope for development; net profit. £880; double-fronted shop, well fitted; large stock; excellent living accommodation; rent £90 yearly; held on lease; ill-health cause of sale; price £2,250 cash.

Messrs. O. & Co. desire to emphasize the necessity of a periodical Statement of Account by which means alone Profit, the value of Business, &c., can be determined. Involving as this does the labour of Stocktaking and Valuation, it is often omitted and eventually becomes the cause of confusion and loss.

## **Valuations for Stocktaking**

Mcssrs. O. & Co. prepared to undertake these essential duties and make Special Terms for such services

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Valuers and Transfer Agents, 41 Argyle Square, KING'S CROSS, W.C.1.

(One minute from St. Pancras and King's Cross Stations.)

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2.—WEST OF ENGLAND (large town).—Sound Cash Retail Business, with valuable proprietaries; net profit £550 clear; splendid house, large garden, lawn, fruit trees, etc.; low rent, on lease; handsome pharmacy, very heavily stocked; price £2,000; worth attention.

3.—EAST COAST.—Good-class Cash Business, in central position of busy town; returns £2,000; plenty of scope; handsome modern pharmacy and excellent living accommodation; price, with property, £3,200, mortgage can be arranged.

4.—DEVON.—Medium-class Cash Retail, in large town; returns over £1,100; net profit about £350; moderate rent, on long lease; good house attached; double-fronted shop, well stocked; price £750.

5.—LONDON, S.W.—Good middle-class Suburban Business; returns average £2,000, under management, can be much increased; modern pharmacy; stock and fixtures worth £1,100; price £1,450, or close offer.

TO INTENDING VENDORS

## TO INTENDING VENDORS

SPECIAL NOTICE.—Having a very large number of genuine buyers seeking businesses, from £800 to £3,000, in all parts, especially Home and Southern Counties, South Coast and Midlands, we are able to effect speedy sales without any publicity, and cordially invite correspondence and applications for our terms. Also a superior business is required for a client with £4,000 cash at command.

#### STOCKTAKING VALUATIONS.

We are now booking dates for July and August at special reduced terms and invite early applications.

> ESTABLISHED 1870. Telephone: 651 Museum.

## The Association of Mnfg. Chemists

Head Offices-26-28 Kimberley House, Holborn Viaduct, London, E.C.1 (and at 2 Bixteth Street, Liverpool) PARKIN S. BOOTH, Accountant and Valuer.

PHONE: CITY 6942-43.

WE HAVE THE FOLLOWING BUSINESSES FOR DISPOSAL.

1.—DORSET.—Recently-established Cash Retail Business; returns at rate of £1,250; lock-up shop, situate on main road between Bournemouth and Poole. No near opposition. Premises held on lease, 14 years. Rent £60. Well stocked. Price for immediate sale, £600.

2.—LONDON, N.—Good Retail Business, taking £1,500 per annum; well-stocked and fitted; little opposition. Two good living rooms; 7 years' lease, with rent, £52 per annum; inclusive price, £950.

3.—GOLDERS GREEN.—Finely situated Portrait Studios and Photographic Business; lease 84 years, at £175 per annum; premises consist of basement, double-fronted shop, and 3 floors above. Full particulars on application to this office.

4.—OLD KENT ROAD, S.E.—Retail Cash Business; well situated; premises held on lease—4 years at £75; premises subjet at £50; turnover, approx. £25; full particulars on application.

5.—SOUTHAMPTON.—Well-established Chemist and Druggist's Business, situate in suburbs; good scope for N.H.I.; very little opposition; nice, commodious premises; property can be acquired; stock and fixtures about £350; full particulars on application.

6.—WANTED.—North of England, or East or West Coast, Retail Chemist and Druggist's Business, with turnover £2,500-£3,000 per annum; or would entertain neglected Business if scope for development; capital available, £1,500. Fullest particulars to this office.

STOCKTAKING.—Now is the time to take your stock. Perhaps it is too much trouble or you have not the time to spare. Then why not consult the Practical Firm who will do this work for you for a small inclusive fee, without interference with your work? For full particulars write as above.

## THOS. TOMLINSON & SON

CHEMISTS' VALUERS CHEMISTS' TRANSFER AGENTS, CHEMISTS' **STOCKTAKERS** CHEMISTS' ACCOUNTANTS CHEMISTS' INCOME TAX EXPERTS,

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Invite Correspondence rc Purchase or Sale of Businesses, Stocktaking, &c.

Over Fifty Years' Establishment.

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All valuations have the personal attention of F. J. Brett, M.P.S Transfer Agents and Valuers,

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Telephone: 1934. SOUTH COAST.—Returns £1,100. Good, double-fronted, electric lighted Shop and Premises; light middle and working-class trade; good opening for Photography, price £750. MIDLANDS.—Returns £1,300. Light Retail and some Wholesale; large double-fronted shop in busy working-class the complete from the comp

thoroughfare; price £600.

KENT.—Returns £800. Donble-fronted Shop and good House; neglected; capable man can much increase; low rent; price

neglected; capable had the factor of the fac

## ERNEST J. GEORGE

Chemists' Valuer and Transfer Agent.

#### INCOME TAX SPECIALIST.

Write for Special and Inclusive Terms for Stocktaking and Preparation of Accounts.

#### BUSINESSES FOR SALE.

The following are on offer (subject to being unsold), all have been thoroughly investigated :-

DERBYSHIRE.-High-class Pharmacy, in best residential part of industrial town; total ingoing about £1.350.

GLOUCESTERSHIRE .- Good mixed Business, with living accommodation; moderate rental; average net profit, £500-£600; owner retiring through ill-health; total ingoing, £1,350.

#### BUSINESSES WANTED.

Several businesses in large towns or cities, England or Scotland; buyers ready with Cash up to £4,000.

3 ST. PAUL'S CLOSE, WALSALL. Tel. 774.

## FREDK. H. RICHARDS

Expert Chemists' Valuer, Transfer Agent & Stocktaker

Expert Chemists' Valuer, Transfer Agent & Stocktaker

1. PHARMACIST, with two London Retail Shops, desires Partner to assist him in one. Capital required, about £1,500.

2. LONDON, S.W.—Drug Store, Lock-up Shop and Parlour. Returns £10 per week, under unqualified management. Scope for great increase. Kodak Agency Opening for N.H.I. Price £500, or offer.

3. BANKS OF THAMES.—Nice Corner Shop. Returns about £800 and increasing. Low rent; lovely House. Price £550 and stock at valuation about £250.

4. LONDON.—Wholesale Toilet and Perfumery Business for Sale; price £1,350, or would entertain partnership.

5. LONDON SUBURB.—Lock-up Shop and Parlour in busy main road; handsomely fitted and well stocked; returns about £1,000; Long Lease. Price £600 or offer. Businesses Wanted, £300 to £3,000. Bona-fide clients waiting. Lowest Terms for Stocktaking and Valuations. Recommended by leading Wholesale Houses.

8 CHICHESTER HOUSE, CHANCERY LANE, W.C.2
'Fhone: HOLBORN 593,

## BAKER & ROBERTS

Valuations for Income Tax, Probate, and Transfer, Personally conducted by W. Rooke Roberts, M.P.S.,F.S.M.C

174 VICTORIA STREET, S.W.1 Tel.: Victoria 27.

And at 7 Estate Buildings, St. Stephen's St., Bristol. Recommended by the British Drug Houses, Messrs, Meggeson Ltd., etc.

#### CHARLES C. MARSDEN

Valuer, Transfer Agent and Stocktaker, 44 SHOLEBROKE VIEW, LEEDS.

VALUATIONS for Stocktaking, Special low terms.

Recommended & approved by Messrs. Goodall, Backhouse & Co., Hirsh, Brooke & Hirsh, Ltd., and Raimes & Co.

#### SALES BY AUCTION.

Re W. P. Rookes in Bankruptcy. By Order of the Trustee. EASTLEIGH.

NOTICE of Sale by Public Auction of the well-placed Long Leasehold BUSINESS PREMISES known as 10 STATION HILL, EASTLEIGH,

situate quite close to the Railway Station and the Southern Railway Works, together with the FIXTURES, FITTINGS AND GOODWILL OF THE BUSINESS OF A CHEMIST, which business has been established for over 35 years. A portion of the dwelling accommodation is let on a weekly tenancy, but VACANT POSSESSION of the Shop and sitting room behind shop will be given on completion of the purchase. The property is leasehold for the unexpired term of over 900 years at the annual Ground Rent of £3.

SCAMMELL & SMITH

will offer the above for Sale by Public Auction at the Junction Hotel, Eastleigh, on Thursday, July 5, 1923, at 7 o'clock in the evening.

Particulars of Sale of the Solicitors, Messrs. Goater & Blatch, Southampton; the Trustee, P. S. Bootb, Esq., 14 Holborn Viaduct, London, E.C.; or of the Auctioneers, Station Hill, Eastleigh.

#### AGENCIES.

SWEDEN.—Agent, well introduced to the Textile, Soap and Cellulosa Industries, requires Agencies in Salt Cake and Bleaching Powder as well as other sultable articles; highest references. Replies to 113/12, Office of this Paper.

A NORTHERN House of Sundriesmen require Representatives, one for Yorkshire and one for Durham and Northmberland; excellent existing connection of 20 years' standing; knowledge of the trade essential; preference given to men with personal connection and living on the ground. 115/25, Office of this Paper. of this Paper.

#### NAMES AND ADDRESSES.

When sending advertisements for any of the sections in this Supplement, advertisers-as a guarantee of good faith and not necessarily for publication-should always give their names and addresses. It sometimes occurs that this rule is not foilowed and deiay and disappointment ensues. Strict attention to this detail will be appreciated.

#### BUSINESSES FOR DISPOSAL.

6s. for 50 words or less; 6d. for every additional 10 words or less, prepaid.

he Anvertiser may if preferred have replies addressed to this Office, and ferwarded on payment of an additional charge of 1/-.

CORNISH RIVIERA.—Nucleus of Dispensing and light Retail business, particularly suitable for Pharmacist retiring or recuperating. Price, including modern Freehold House, with direct sea and mountain views, £1,000, or closest cash offer. Also, subject to being unsold, sound, old-established Cornish Business, advertised this column June 16. "Owner," 116/2, Office of this Paper.

NORTH-WEST Lancashire Coast Town. — Well-established Pharmacy and Surgical Business; freehold property; good living accommodation; takings over £1,000 per annum; could be doubled by energetic man; mostly Prescribing and Surgical Fitting; would suit unqualified or qualified man. Owner retiring. Apply 116/27, Office of this Paper.

OMERSET.—Well-established Cash Business, well situate in large town; return over £1,800; scope for Photo and Optics; rent £60; excellently equipped shop, good house, large garden with fruit trees; price valuation estimated by vendor £1,500, and moderate goodwill to be arranged. Apply, Baker & Roberts, Chemists' Valuers, 174 Victoria Street, S.W.1.

Y ORKSHIRE (West Riding); working class district; returns £1,352; N.H.I., 4,437; population, 6,000; unopposed; stock and fixtures, £700; Freehold Property if desired. 116/20, Office of this Paper.

FOR immediate disposal, neglected, Chemist's Business in thickly populated London district; good living accommodation and available for immediate occupation; low rent and rates, long lease; good living for qualified or nnqualified man; price £225 cash; sound investment. Apply, 114/50, Office of this Paper.

FOR Sale, owing to death of proprietor, good-class Chemist's business; also the property (shop and house); grand opportunity for energetic man; growing neighbourhood; no competition; splendid position; established several years; long lease; North London. Also Cut-glass Window Shelves; no agents. "Borax," 116/3, Office of this Paper.

LIGHT country Retail Business for disposal, unopposed for 8 miles, with unrestricted wine licence; excellent bouse of good size, with bathroom and pretty garden; very easily worked; returns about £1,300, has done more; price of freebold and business, £1,600; Midlands; bankers' reference required; no agents. 116/13, Office of this Paper.

#### BUSINESSES WANTED.

6s. for 50 words or less; 6d. for every additional 10 words or less, prepaid.

WORCESTERSHIRE.—Wanted to purchase, a Chemist's Business in this County.—Please state full particulars as to turnover, amount required, etc., which will be treated with the strictest confidence by "Rbubarb" c/o British Drug Houses, Ltd., Graham Street, City Road, N.

BUSINESS wanted, within area fifty (50) miles of Liverpool, with turnover of about £2,000 per annum; advertiser prepared to pay £1,000 to £1,200 for satisfactory investment. Apply, 27/866, Office of this Paper.

#### SITUATIONS OPEN.

#### [HOME.]

#### RETAIL.

6s. for 40 words or less; 6d. for every additional 10 words or less, prepaid.

The Anvertiser may if preferred have replies addressed to this Office, and forwarded on payment of an additional charge of 1/-.

BIRMINGHAM.—Qualified Assistant wanted immediately with good knowledge of Photographic sundries; state full particulars and wage required. Samuel Thornley, Ltd., Druggists and Drysalters, 6 Snow Hill.

CRIMSBY.—Wanted, an unqualified Assistant from July 16 to September 15; must be good Dispenser and Window-dresser; state age and salary required, and supply references. Apply, 114/33, Office of this Paper.

HORLEY.—Assistant required for three months. Apply by letter, giving full particulars and salary required, outdoors, to A. B. Higgs, Chemist and Optician, Horley, Surrey.

L ONDON.—Lady, Minor, required shortly; careful Dispenser and competent Counter Assistant; state age, experience, salary required; outdoors; when disengaged. 114/37, Office of

L ONDON.—Assistant required; age from 25 to 35; must be good Window-dresser, smart Salesman, and accurate Dispenser, with knowledge of photography. Apply with full particulars to 27/872, Office of this Paper.

L ONDON.-Wanted, Junior Assistant, with good knowledge of Photography. Apply, stating previous experience and salary required, to Wilkie, 28 Hildreth Street, Balham.

LONDON, S.E.—Wanted, Dispenser, about 30 years of age, with. Minor qualification; hours of work approximately 8.45 a.m. 'to 6.15 p.m., Saturdays till 1 p.m.; with 5 years' qualification £5, under 5 years' qualification £4 15s.; kindly state full particulars of experience; personal call will be necessary. Write Box 110, Sells Advertising Offices, Fleet Street,

LONDON, W.2.—Experienced Male Assistant, age not over 35, required for the front counter. Apply, E. C. Evans, Pharmacist, Wm. Whiteley, Ltd., Westbourne Grove, W.2.

LONDON, W.—Capable and energetic Assistant required, chiefly for Dispensing, in high-class West-End Pharmacy; room provided. Apply, giving full particulars of age, experience, and salary required, and arranging interview, to Potts & Rees, 62 South Audley Street, Grosvenor Square, W.1.

MANCHESTER.—Qualified junior Dispenser required for a high-class city husiness; only gentlemen with experience in good Pharmacies considered. Reply, with fullest particulars, to 116/26, Office of this Paper.

MONSALL HOSPITAL, MANCHESTER.—Wanted, qualified Locum for Dispensing, male or female, from August 8 to 28 inclusive; hours 9 until 5, half-day Saturday, no Sunday duty; wages £4 10s. per week with dinner daily; no travelling expenses; send copies of recent testimonials. Apply, Medical Superintendent

A TEMPORARY Assistant, about 22, for three weeks commencing July 15, for Dispensing and Counter. Apply, stating age, reference, and terms, outdoors (applications not answered in three days declined), to G. N. Edwards, Chemist, Ipswich.

A SSISTANT required; permanency and good prospects. Apply by letter, giving usual information, Timothy White Co., Ltd., Portsmouth.

DISPENSER Required, from July 9 to 23; experience in Institution necessary; all Saturday and Sunday free; also Thursday evening; salary three guineas weekly. Apply by letter only. Applications not answered in four days declined with thanks. Eastern Dispensary, Leman Street, Whitechapel.

HICKMAN & METCALF have a vacancy for a gentlemanly youth as Apprentice; an exceptional opportunity occurs for learning various branches of the business: Laboratory, Dispensing, Counter and Photography (D. & P.). Market Place, Newbury.

#### METROPOLITAN BOROUGH OF WOOLWICH.

#### TUBERCULOSIS SERVICE.

#### APPOINTMENT OF CLERK-DISPENSER.

APPLICATIONS are invited for the position of Clerk-Dispenser at the Woolwich Tuberculosis Dispensary.

The person appointed must he a qualified Dispenser, and will be required to carry out the whole of the dispensing work of the Dispensary and to keep the necessary records and accounts relating thereto. Experience in general office work is essential. A knowledge of Shorthand and Typcwriting will be considered additional qualifications.

Salary £110 per annum, together with honus in accordance with the Award of the Civil Service National Whitley Council Cost of Living Committee. The salary with present honus amounts to £189 18s. per annum.

Applications in candidate's own handwriting, stating age, experience and present employment, and accompanied by copies of not more than three recent testimonials, to be sent to the undersigned not later than 12 noon on Wednesday, 4th July, 1923, endorsed "Clerk-Dispenser."

Selected candidates only will be notified of the appointment when made.

By Order.

By Order, ARTHUR B. BRYCESON, Town Clerk.

Town Hall, Woolwich, S.E.18. June, 1923.

JUNIOR unqualified Assistant wanted (male), for Light Retail and Dispensing; good references as to character essential. Apply, stating age, salary required, and usual particulars, J. A. Nurse, Pharmaceutical Chemist, High Street, Lowestoft.

LADY Dispenser required, Hall certificate; willing to assist at Counter. Apply by letter, giving full particulars of training, experience, age and salary required to 27/873, Office of this Paper.

I OCUM, Junior, unqualified, 3 or 4 years' experience, July 3 for a fortnight, indoors; state terms; rail paid one way. Keeley, Chemist, 423 Lytham Road, South Shore, Blackpool. Phone 197.

MANAGER required, not over 36, for good class Business; must have had thorough general experience. State all particulars, age and salary required to 27/874, Office of this Paper.

PHARMACIST to take charge of Dispensing Department; the position offers prospect of management of hranch; sult recently qualified Chemist, Applicants should give full particulars of experience, stating age and salary required. S. M. Hihherd, 26 Queen Street, Wolverhampton.

PHARMACIST required as Branch Manager, consequent upon expansion of husiness; permanency and good prospects. Apply by letter, giving usual information, Timothy White Co., Ltd., Portsmouth.

QUALIFIED Assistant, experienced, for brisk, good-class agricultural business; knowledge of Photography. Full particulars to Thos. Edmondson, Chemist, Penrith, Cumberland. Applications not answered in four days respectfully declined.

QUALIFIED and experienced Manager required for Branch Business; reliable Dispenser, good Counterman. Full particulars of experience, age, height (photo, if possible), salary and when disengaged, to Barrow Co-operative Society, Ltd., Ahhey Road, Barrow-in-Furness.

QUALIFIED Locum wanted for two weeks from July 9, for busy Cash and Dispensing Business; preferably abstainer; outdoors; send full particulars, salary required, references, etc. Pearmund, Chemist, Calverley Road, Tunbridge Wells.

QUALIFIED Locum required, July 28 to August 11, 1923; colliery district; state age and terms; applications not answered in three days respectfully declined: Moorhouse, Drug Dept., Co-operative Society, Denahy Main, near Rotherham, Dept., Yorks.

## Returning Photos, &c.

Advertisers in this section who receive portraits and copies of testimonials from applicants, with a stamped addressed envelope for reply, are reminded that the undue retention of these often means a hardship to the sender. All personal documents should be returned as promptly as possible after perusal. QUALIFIED, not under 30, wanted from July 16, London, outdoor; good Counter and Photographic experience necessary; state age, experience and salary required; permanent and progressive situation to suitable man; applications not answered in 7 days respectfully declined. Apply, Manager, Passco, 5 St. George's Rd., S.E.

QUALIFIED Assistant, capable of taking charge; quick at Counter and accurate Dispenser, knowledge of Photography and Window-dresser; must be smart man. Apply, giving full particulars, age, height, experiences, married or single, salary required and references to 27/876, Office of this Paper.

QUALIFIED Manager required for Light Retail and Dispensing business situate in the West Riding of Yorkshire. State age, experience, and salary required. 110/25, Office of this Paper.

UNQUALIFIED Locum wanted for three weeks from July 30 to August 18. Full particulars, age, salary, etc., to J. Hoare, Drug Stores, 812 Stratford Road, Sparkhill, Birmingham.

WANTED for season, capable Assistant, with good Dispensing and Retail experience; age about 28. Apply, with full particulars and photo if possible, to Wm. Rosser, Bailey & Co., Margate.

WANTED, unqualified Assistant, over 30, Window-dressing and Photography; South Wales. 115/35, Office of this

#### WHOLESALE.

MANCHESTER AND DISTRICT.—Traveller wanted, with good connection among Chemists; one who can add Asthma specialities to his agencies without clashing; commission basis. Hinksman & Forrest, Ltd., Carluke, Scotland.

A FIRM of Wholesale Chemists, who act as Agents for several well-known Proprietary houses, and offer, in addition, their own lines of Drngs, Sundries, etc., require a Representative to cover the Chemists and Stores in the Midland Counties; must be well known on the ground and have a knowledge of the Drug trade. Applications should he accompanied by full particulars of experience, etc., and of remuneration required (salary and commission basis). 27/875, Office of this Paper.

#### REPRESENTATIVES.

AN attractive Sideline is offered to goodclass Travellers with an extensive connection and able to do big business. The
line is in regular demand and fills a gap.
Exclusive territory given, but nearly whole
of Midlands and South-East Counties
already covered. Applications from buying
agencies for exclusive areas will he considered. Please state exact ground covered,
approximate number of customers therein,
and agencies already held, in confidence.
Good areas at present held yield from £3
to £6 weekly. 115/35, Office of this Paper.

EXPERIENCED Works Manager required by firm of Wholesale Druggists; Major man preferred, but not essential. Glve age and salary required. 116/4, Office of this Paper.

PIRST-CLASS Representatives wanted with good connections to sell-Tablets, Fine Chemicals, Photographics, Brushes, and Sundries, etc., in the following districts: Lancashire, Yorkshire, North-East Coast and Birmingham; salary and commission; Pharmacist preferred. Apply, 27/877, Office of this Paper.

POREWOMAN, with experience in packing and finishing experience, and wage required, Southall Bros. & Barclay, Ltd., Birmingham.

MALT AND OIL.—Well-known Manufacturers, with connection, require first-class, energetic Representative for Lancashire, Cheshire, Warwickshire, Staffs., etc.; must have good connection amongst Chemists and Druggists. State ground covered, with fullest particulars, in confidence. 27/869, Office of this Paper.

REPRESENTATIVES required for various parts of England and Scotland with good connection amongst Chemists, Photographers and Photographic Dealers, by house well-known in the trade, for the sale of Photographic and Pharmaceutical Chemicals. Those at present calling on the trade regularly and having first-class connections and requiring a good profitable side line, reply in confidence, giving ground covered, etc., to 27/867, Office of this Paper.

PEORGANISATION of ground.—Old-established Firm manufacturing Medicated and British Pharmacopæia Lozenges, Pastilles, Juhes, Wafers, Pellets, Floral and Silver Cachons, etc.. etc., are open to appoint first-class Representatives in England, Wales, Scotland, and Northern Ireland; good commission. Particulars, etc., to 116/15, Office of this Paper.

REPRESENTATIVES desired for a new Dental unique speciality (not paste), on commission, reliable men calling on chemists. State ground, references, etc., to Dento, 31 The Broadway, Crouch End, N.S.

TRAVELLERS wanted.—Men with good connections looking for really good selling line of Perfumery and Toilet requisites, should turn to the Areco announcement on p. cxiv.; no salary (liheral commission only, payable weekly). Waterhouse & Co., Ltd., 24 Holborn, London, E.C.1.

WANTED, Advertising Manager for large firm of Retail Chemists, with special knowledge of Window-dressing and selling schemes; should have technical ability and be able to write effective selling matter; state experience and salary required. Apply, 27/868, Office of this Paper.

WANTED, on commission basis only, Representatives to carry Medicinal Tablets, Drugs and Toilet Preparations in the following districts:—
No. 4 Shropshire, Hereford and Worcestershire.
No. 6 Norfolk. Suffolk and Cambridge.
No. 7 Essex, Hertfordshire, Buckinghamshire and Middlesex, other than the County of London.
No. 8 Oxford, Gloucestershire and Berkshire.
No: 13 North Wales.
Write 27/871, Office of this Paper.

#### [COLONIAL, INDIAN AND FOREIGN.]

CALCUTTA.—Works Chemist wanted for Calcutta; competent in manufacture Galenicals, Extraction of Alkaloids, Analytical and General Manufacturing; Rs.500 per month, with annual increases; 4 years' agreement; passages paid. Apply, "E. H.," 27/870, Office of this Paper.

JAPAN.—Qualified Junior, five years' agreement; indoors; 1st year, £144; 2nd year, £156; 3rd year, £168; 4th year, £180; 5th year, £192; passage paid. Apply for and with full particulars (recent photo essential), to J. W. Franklin, Minato, Dene Road, Northwood.

KOBE, JAPAN.—Qualified Assistant required for European husiness, age about 25; must be total abstainer; experience in General Pharmacy necessary; 4 years' agreement; salary commencing 150 yen per month, with board and lodging; second-class passage paid out and home. Apply, with copies of testimonials and photograph, to 27/860, Office of this Paper.

#### SITUATIONS WANTED.

#### RETAIL

#### [HOME.]

2s. for 18 words or less; 6d. for every additional 10 words or less, prepaid.

The ADVERTISER may if preferred have replies addressed to this Office, and forwarded on payment of an additional charge of 1/-.

A PHARMACIST highly recommends Assistant, capable Dispenser; excellent Prescriber; 24; reliable, trustworthy, disengaged. "M.," Chemist, 12 Denning Road, Hampstead, N.W.

A QUALIFIED Young Lady desires permanent post as Assistant or Dispenser; accurate. 113/34, Office of this Paper.

ACTIVE Pharmacist (45), tall, experience varied, references good, appearance right; liberty 29th inst.; wire secures; salary 55s. Charnock, 39 Avenham Road, Preston.

A LL-ROUND Assistant, unqualified, with good experience and references, shortly desires post, Photography and Window-dressing. Write, 115/36, Office of this Paper.

AS Locum; excellent London, Provincial experience and references; moderate terms; disengaged; energetic, reliable. "Chemist," 176 Lewisham High Road, S.E.4.

AS Locum or permanency; bigbest references; good experience; disengaged shortly. "Chemist," 9 Barkham Street, Wainfleet, Lincs.

A SSISTANT, unqualified, elderly, active worker, disengaged. "Dispenser," 36 Infirmary Walk, Worcester.

A SSISTANT, unqualified, 33, good class Counter and Dispensing experience, also Photographic. E. Searle, 2 Carlisle Avenue, Plymouth.

A SSISTANT (34), good appearance, unqualified, good-class and Photographic experience; reliable and energetic. "S.," 189 Westbury Avenue, Wood Green.

A SSISTANT, permanent or temporary, unqualified, 25 years' London and country experience; single. "A. F." (P.C.B., 46/32), Office of this Paper.

A SSISTANT, single, unqualified, London and Provincial experionce Dispensing, Counter, Certified Dentist; salary as Assistant, commission on Dental. "Galenicorum," 115/37, Office of this Paper.

A SSISTANT (female), 18½, unqualified; two years' experience Stock Room, also putting up stock, desires situation; London district; highest references. Haskell, 5 Ditton Hill Villas, Ditton Hill, Surbiton, Surrey.

A SSISTANT, unqualified; good experience in Counter Dis-pensing, Photography; energetic and accurate; disengaged. Davies, 9 Electric Parade, N.7.

BOOK-KEEPING and Clerical Work; day or evenings. Apply "X. Y. Z.," 109/34, Office of this Paper.

BRIGHTON, or near, preferred; whole or part-time unqualified Assistant, used to quick counter trade, good Window-dresser, experienced, not afraid of work; highest references given. Donaldson, 21 St. James Avenue, Brighton.

CHEMIST (widow) desires engagement Housekeeper, light Retail; capable, trustworthy, middle-aged; Bristol preferred. "Chemicalis," 59 Primrose Avenue, Haslington, Crewe.

CHEMIST and Optician, both qualifications, would entertain Partnership, or as Manager, with view to succession. Replies to 115/34, Office of this Paper.

CHEMIST and Druggist (34), with sound business experience, Wholesale and Retail, requires position of management; square trained, qualified 1910; married; highest references. Write, "Statim," 116/11, Office of this Paper.

COMPETENT Assistant (34), unqualified, 18 years' all-round experience, tactful and courteous salesman, first-class Dispensing and Agricultural experience desires permanency; undeniable references; at liberty shortly. "Competent," 116/8, Office of this Paper.

COMPETENT Assistant, requires position; over 16 years' West End experience; excellent references; abstainer; good Dispenser and Prescriber. "Statim," 390 Clapbam Road, S.W.9.

DISENGAGED.—Qualified, Permanent or Temperary Manager; highest references. "Agar," 22 Ellison Road, Barnes, S.W.

DISPENSER and Book-keeper, 40, requires permanency or Locum; experienced; good references. Strutt, 2 London Boad, Hailsham.

DISPENSER, Major qualification, disengaged July 9, Hospital, Locum, N.H.I. or cover, temporary or permanent. "Locum," The Dispensary, Banstead Montal Hospital, Sutton,

DISPENSER (Lady), Hall, requires post; holiday duty or permanent; disongaged July 9. L. Scriven, "Brenton," 3 Langford Road, Bognor.

ELDERLY Pharmacist, healthy and active, well recommended, desires post. Brown, 49 Henry Street, Rishton, near Blackburn.

We desire particularly to draw the attention of Colonial and Foreign Subscribers to the fact that in cases where they require partners, agents or assistants, or wish to sell their businesses, an Advertisement in this Supplement, placed in every copy of "The Chemist and Druggist," should be the readiest means of helping them to attoin Druggist," should be the readiest means of helping them to allow their object. The tariff for such announcements is given under the appropriate headings in the Supplement. Instructions and remittances can be sent to us direct or through the advertisers correspondent in this country.

Vancouver Road, Forest Hill,

Vancouver Road, Forest Hill,

BONUS offered anyone securing post for unqualified Dispenser, with laboratory experience; age 28; excellent references. 116/1, Office of this Paper.

JUNIOR Assistant (20), seeks opening; beight 5 ft. 11 in.; good all-round experience; keen, willing; well recommended. Herbert, Brown's Pharmacy, High Street, Collingham, Notts.

KEEN, energetic Junior Improver requires situation, Dispensing, Photo, and Counter knowledge. D. H. Barton, Bay Tree Cottage, Malvern Wells.

LADY Dispenser, qualified, experienced, recommended, wants full or half-time post. R. Benson, 501 Hornsey Rise, London, N.19.

LADY Dispenser, experienced, wishes Locum duties; live in or out; disengaged August and September. 113/16, Office of this Paper.

ADY Dispenser, Book-keeper (Hall), desires post, Doctor or Institution; seven years' experience. "Dispenser," 42 Emperor's Gate, S.W.7.

ADY Dispenser (Hall), 5 years' experience, excellent testimonials, is free for holiday Dispensing from August 1, or permanency. 116/30, Office of this Paper.

ADY ASSISTANT, unqualified; fill any position in Retail shop; good Counter and Dispensing experience. Apply "P. C. B.," 46/30, Office of this Paper.

L OCUM, qualified, disengaged July 19 to August 4 inclusive; thorough all-round experience. Dear, 111 Montague Street, Worthing.

LOCUM, qualified, 25 years' all-round experience, 14 years' Optical; highest references. Gittins, 7 Salisbury Road, Handsworth, Birmingham.

LOCUM, disengaged June 30; engagement desired for next fortnight; Minor; elderly. P. Smith, 127 Capel Road, Forest Gate, E.7.

L OCUM.-Dispenser' (Lady), free August 4 to August 18; country or sca. D. Woodforde, 172 New Kent Road, London, S.E.1.

I OCUM Tenens; 30 years' wide experience; qualified; efficient service; highest credentials; moderate terms; any distance, one railway fare; disengaged during July only. M. Smith, 96 The Drive, Humberstone, Leicester.

OCUM, M.P.S., D.B.O.A. 116/7, Office of this Paper.

LOCUM; qualified, 48, active, ex-officer, Dispenser to Doctor, country or seaside; disengaged; twenty-one years with same Doctor. P. C. B., 47/16, Office of this Paper.

TOCUM Disengaged; elderly Scotsman; abstainer; full qualifications; experience all class trades. Write "T.," 39 Argyle Gardens, Upminster, Essex.

M.P.S. is open to book dates as Locum; good all-round experience. E. H. Bedford, 11 The Crescent, Hyde Park, Leeds.

QUALIFIED; Senior; single; permanency; high-class Dispensing and Retail; N. Wales Coast resort or Birkenhead districts preferred. 113/33, Office of this Paper.

QUALIFIED (24), desires post as Dispenser in high-class Pharmacy; conscientious, energetic, accurate; highest references; disengaged October. "Chemicus," 115/32, Office of this Paper.

QUALIFIED Chemist; elderly; Hospital or Institution; 11 years' Hospital experience. "Cbelsea," 22 Bramerton Street, Chelsea, S.W.3.

QUALIFIED Dispenser (Lady); five years' experience; requires post; Chemist or Doctor. 71 The Drive, Ilford, Essex.

REGISTERED, Branch, small, Prescriber, Super, etc.; moderate salary; Midlands preferred. Address, "D.," 52 Royal Road, Walworth, S.E.17.

STUDENT (21), excellent testimonials, good knowledge of Photography, speaks good French, seeks opportunity for exporience in Dispensing; any reasonable suggestion welcomed. Mattar, 8 Gertrude Street, Chelsea.

55/- WEEKLY; Locum or permanency; efficient Counterman and Dispenser; good references. "Qualified," 66 Vancouver Road, Forest Hill, S.E.23.

#### WHOLESALE.

The ADVERTISER may if preferred have replies addressed to this Office, and forwarded on payment of an additional charge of 1/-.

A BERTH is required, man 33; good knowledge Buying, Selling, Shipping; fourteen years' experience best houses.

"H. B.," 19 Kelvin Road, Highbury, N.5.

BACTERIOLOGIST and Pharmacist, 28; 5 years' war service; M.P.S.; 5 years' Laboratory experience in Bacteriology; willing to take any post. M.L. 1456/23. Office of this Paper.

EX-OFFICER, 34, desires post as Business Manager, Organiser, Representative, Salesman, Interviewer or General Secretary; thorough knowledge of Chemistry, Photographic Equipment, Snrgical Goods, etc.; is willing to take any post. M.L. 19088, Office of this Paper.

EX-OFFICER, 33, single, 4 years' war service, decorated, qualified Chemist and Druggist, 7 years' Retail and 3 years' Manufacturing experience, French, German and some Italian, desires appointment, Wholesale or Manufacturing; home or abroad. M.L. 1995/23, Office of this Paper.

EX-OFFICER, 33, married; educated Public School; wide experience and connection amongst Doctors, Hospitals, Clinics, Chemists (wholesale and retail); knows Continental, Indian and Egyptian markets, well in this connection; has also wide experience in this country; thorough knowledge display advertising and exhibition work all branches; good knowledge office routine, administration, organisation; willing to take post as Traveller or Representative, home or abroad, preferably abroad, or is willing to take any post for which qualifications are suited. M. L. 64214, Office of this Paper.

FOREMAN Pill and Tablet maker; 18 years' first-class experience in all branches; also Coating of all kinds. A. J. Goldstone, 11 Hillery Road, Walworth, S.E.

CENERAL MANAGER OR REPRESENTATIVE.—Ph.C. seeks position with Wholesale Drug House; exceptional experience and record; resident in Birmingham. 114/25, Office of

GENTLEMAN, experienced travelling Representative, shortly disengaged, seeks appointment; highest references; well-known to medical profession. Apply, P.C.B. 46/18, Office of this

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